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EDITORIALS

British Restriction Anxiety

THAT the policy of discouraging new planting through restricting rubber exports might result in the British Empire, now controlling 70 per cent of the plantation output, finding itself in a few years lagging behind in its supply and development was intimated by A. W. Still at a recent session of the Dominions and Colonies Section of the Royal Society of Arts in London. He had lately returned from Malaya and was much impressed with the enormous possibilities of the commodity, declaring that 1,500,000 tons of rubber or three times the present annual output would be needed within twenty years; hence the tremendous importance of the future supply. He could not remain still when national interests were at stake, and would continue to preach more planting even though he might be accused of heresy or fanaticism. His remarks followed an address by Sir Stanley Bois, former chairman of the Rubber Growers' Association, defending restriction.

Yet similar sentiments were expressed here years ago when it was contended that restriction, although conferring price advantage for awhile, could not insure prolonged prosperity for the British planting industry; but that it would, in tending to limit the reserve of maturing trees, endanger British market primacy in the event of the opening up of other great rubber-producing areas. It is easy to understand why even beneficiaries of the Stevenson Scheme fear that it may overstay its time so that rubber growers, lulled by it into a false belief of lasting security, may actually be caught napping when real competition comes.

Remedy Worse Than Ailment

GAS, water, electric, and power supplies generally are provided under "balanced load" conditions, and such engineering undoubtedly does much toward keeping those industries as it were on even keel. Why, some ask, can not other commodities be purveyed likewise; and why can not a "reservoir of products" also be maintained to steady the tire industry in which so many often let their enterprise get the better of their judgment so that sound trade is imperiled through over-production with its price wars, rebates, and failures?

To avert such calamity one economist, whose chief anxiety is waste in industry, even urges much closer fusion of tire production activities. Quoting a member of the American Engineering Standards Committee as saying that "One American tire-making concern has the plant facilities to supply the entire national demand," he contends that it would be of great economic advantage to the country to let one such concern make all the tires.

It is conceivable that such a monopoly might help much in correcting industrial prodigality, providing some sort of balanced load, and forestalling booms and slumps; but the stabilization of the tire industry through such means would be a dearly-bought advantage. Power would be concentrated in the hands of a few, invention would be discouraged, individual initiative would get scant reward, collateral industries would suffer keenly, and the pendulum of standardization and simplification would swing to the drastic extreme.

The American tire industry is, however, not likely to be led by any doctrinaires into establishing any such control, especially as a balanced load goal can be approximated closely enough through ways more safe and sane. To a steadily-increasing degree through Rubber Association and Government questionnaires and private surveys it is more accurately gaging market requirements, helpful trade information is being more freely shared than ever, cheerful cooperation is rapidly growing in favor, and with the benefits of conservative financing now more widely appreciated there is less need than ever of separate units losing their identity in any centralizing scheme.

IF THE DUTCH RUBBER PLANTERS KEEP ON INCREASING their production they will soon be making as much money as the British. Fortunately for them, too, they incur no ill will while garnering wealth. So far they have not been stigmatized as rubber (or robber) barons, they have not been reproached for limiting output, and they have not been suspected of plotting to pay off a war debt by overcharging foreign creditors for an indispensable commodity. Faring well by merely following the market, the happy Hollanders might well be congratulated on their Dutch luck.

IT MAY HAVE FAULTS, BUT THE STEVENSON COMmittee at least saves economists much worry. The latter are sorely troubled now about the grave results of overproduction of cotton, wheat, etc. The committee, however, will see to it that they will not have to fret about a bumper crop of rubber, for a few years anyhow.

THE LAW OF COMPENSATION NEVER FAILS. FORMER wild men of Borneo, gathering rubber for Dutch exporters, are now able to buy American tires, galoshes, and druggists' sundries. Well, we may pay more for crude rubber but we are helping to civilize heathens, and getting paid for our pains.

The Rubber Association of America

Annual Meeting

THE annual meeting of the Rubber Association convened at the Hotel Commodore, New York, N. Y., on January 10, 1927. President J. C. Weston called the meeting to order at 11:30 A. M. After the reports of the secretary and general manager, treasurer and the budget committee, were formally adopted, the fee tax on crude rubber was discussed. It was decided that the pro rata fee for the present year shall be 2¾ cents per hundred pounds, or at such other rate, not more than 2¾ cents and not less than 2½ cents for any part of the year, as the Board of Directors may determine.

Election of Directors

The following directors were elected, five to fill expired terms, and one to fill a vacancy: George E. Hall, president, Boston Woven Hose & Rubber Co.; John A. Lambert, vice president, treasurer and general manager, Acme Rubber Manufacturing Co.; William F. Pfeiffer, vice president and general manager, Miller Rubber Co.; Charles B. Seger, president, United States Rubber Co.; Samuel Woolner, Jr., president, Kelly-Springfield Tire Co.; Paul W. Litchfield, president, Goodyear Tire & Rubber Co.

Election of Officers

The meeting then adjourned until after luncheon, meanwhile the Board of Directors convened and elected the following officers for 1927: J. C. Weston, president; Paul W. Litchfield, first vice president; F. A. Seiberling, second vice president; Samuel Woolner, Jr., treasurer; A. L. Viles, secretary and general manager; George Flint and A. D. Kunze, assistant secretaries.

The Executive Committee

Charles B. Seger and Samuel Woolner, Jr., were elected to serve on the Executive Committee which comprises the president, first and second vice presidents, the retired president, and two members of the Board of Directors. Therefore the Executive Committee is as follows: J. C. Weston, Paul W. Litchfield, F. A. Seiberling, W. O. Rutherford, Charles B. Seger, and Samuel Woolner, Jr.

After luncheon the meeting was called to order by President Weston who delivered the following address:

Address of President Weston

That the rubber industry during the past five or six years has experienced a succession of obstacles, not known to it for a long period of years prior to that time, is a fact well known to all. An obstacle to which the industry has been subjected particularly during the years 1925 and 1926 is an unstable rubber market. During 1925, when the market was rising and selling prices of the finished product were naturally rising also, although at no such pace as did the rubber market, important profits were realized which experience was inevitably to be followed by a reversal on the following market experienced in 1926, during which period selling prices naturally fell more rapidly than average rubber costs could be realized, resulting in a less profitable year, generally speaking.

It is plain to be shown, however, that rubber companies have profited by past experience in falling markets, as I believe we will find when statements come out, that while profits in operations were not as large as we might hope to see them, surplus and capital accounts have been, generally speaking, held well intact, especially when it is realized that the industry experienced a drop in rubber from more than a dollar a pound to slightly less than forty cents a pound at the end of the year.

It is quite generally felt that the rubber market will be stabilized to a much greater degree during 1927 and that market fluctuations will narrow as compared to the experiences of the past two years. Let us hope that this will be the case, which will prove one factor in favor of reasonable profits for the year 1927.

Moreover, during recent years, the intensity of competition for business has been very great, due largely to the fact that the productive facilities of the industry have been increased just prior to the period to which I refer, to a greater degree than the subsequent demand warranted. This keenly competitive situation is only a natural consequence of the excessive plant expansion indulged in, and while the industry, generally speaking, has experienced a much lower average percentage profit on sales, a division of the business between competitors has also been materially effected to the extent that many companies have been unable to hold their former relative positions with the total volume, some having grown smaller while others have grown larger.

This character of development is not peculiar to the rubber industry, but occurs in most industries. It is something which cannot be prevented by trade associations, but a trade association as actively engaged in honest effort and as intelligently operated as is your association by the general manager and his staff, for the purpose of minimizing trade abuses and making constructive recommendations to its membership, can and does help those members who will take advantage of such recommendations to better compete with the conditions which keen competition develops.

When I mentioned the general manager and his staff I was trying to exclude the president. As a matter of fact, these things are done through the executive committees of the divisions in conjunction with the work of the staff.

Of course, this is the association of each one of its members, as the whole membership supported the association financially on a pro rata basis. The Board of Directors and the executive committee representing various divisions are elected by the membership, and therefore it should be the duty of every member to cooperate, and the judgment is expressed in the form of recommendations made by those duly elected to their various activities by the association as a whole.

It has been frequently and rightfully said that in any industry with a potential business as great as exists in the rubber industry there is always room for well-managed companies large or small, and I am fully of the opinion that the efforts put forth by the association are of the same value in the conduct of a successful business to large and small alike.

The president then called upon F. A. Seiberling to speak on maintaining order and dignity at the evening banquet. Mr. Seiberling said in part:

Mr. Seiberling's Admonition

We come here once a year to an annual meeting that closes with an annual banquet, and it is a sort of an outstanding function. I have been present at a number of these banquets. At the last one we had a situation where the whole evening was spoiled by a boisterous one-twentieth or one-tenth, and we feel that the Rubber Association was discredited by that experience in the public eye, and the Board of Directors is unanimous in feeling that we should stop demonstrations of that sort at our evening banquets and to make these gatherings attractive, notable and worthwhile, so that those who travel from long distances will feel that they are compensated for their time and expenditure, and that they will want to come to each recurring meeting. They are then entitled to have order at these gatherings.

A part of the value of these gatherings is the social contact that ought to be encouraged, to a reasonable degree, but not to the extent that a whole evening is spoiled for the major audience and the Rubber Association discredited in the eyes of the people of this country. We are opposed to it as a Board of Directors. We believe that a vast majority of this membership is absolutely opposed to it. We want this evening to be a starting point to other meetings, and if we conduct ourselves quietly tonight and a year from tonight, the time will come when the Rubber Association and the character of the industry will command the best speaking talent in this country.

As there were no other speakers to be heard the meeting adjourned until the evening dinner.

Officers and Directors of The Rubber Association, 1927

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Treasurer

Underwood Studios
C. B. Seger

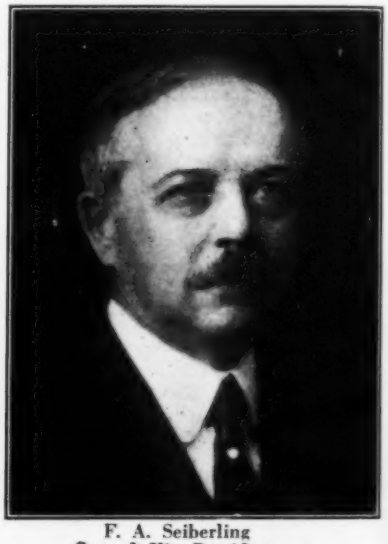
W. O. Rutherford

G. B. Dryden

A. L. Viles
General Manager-Secretary

Paul W. Litchfield
First Vice-President

J. C. Weston
President



F. A. Seiberling
Second Vice-President

J. A. Lambert

C. C. Gates

W. F. Pfeiffer

G. E. Hall

W. O'Neil

E. B. Germain

E. H. Broadwell

A. B. Newhall

Annual Dinner of The Rubber Association

EIGHT hundred and fifty members and guests attended the Twenty-seventh Annual Dinner of The Rubber Association of America that was held in the Hotel Commodore, New York, N. Y., Monday evening, January 10, 1927.

It was a representative gathering of rubber men who assembled before the dinner in the foyer of the ballroom, to renew old acquaintance and exchange amicable greetings with friends in the trade. When the dinner was announced, the orchestra played an inspiring march and the diners entered the dining hall and stood at their tables while the National Anthem was sung.

The program which followed the dinner included addresses by prominent men, and artistic singing by John Charles Thomas, the well-known American baritone. The speakers were James S. McCulloh, president of the New York Telephone Co.; Professor William Starr Myers, Department of Politics, Princeton University; and Arthur ("Bugs") Baer, famous newspaper writer and humorist. President Weston was toastmaster.

President Weston's Address

Once again we are gathered at the festive board where we may lay aside our business cares and join with our business competitors in this great event for the purpose of better acquaintance.

These occasions and our association contacts throughout the year when we discuss our mutual problems in an effort to be of greatest possible service to the public, afford us the opportunity for knowing the real characteristics of our competitors and I find that generally speaking they are not such a bad lot of fellows after all. Therefore, such occasions as this are of real importance.

While our industry is of increasing importance to mankind, which is best exemplified through the fact that the articles made of rubber and necessary to our every day life are found in almost every household and factory, the great percentage of our production is in the form of tires for motor cars, and therefore a dependent industry in this respect, but a distinctly creative industry.

However, the industry on which the motor tires depend is made up of an aggressive body of men and it has been an interesting study to see how in the development years their cooperative effort has successfully broken down one resisting situation after another, resulting in rapidly increasing volume from year to year.

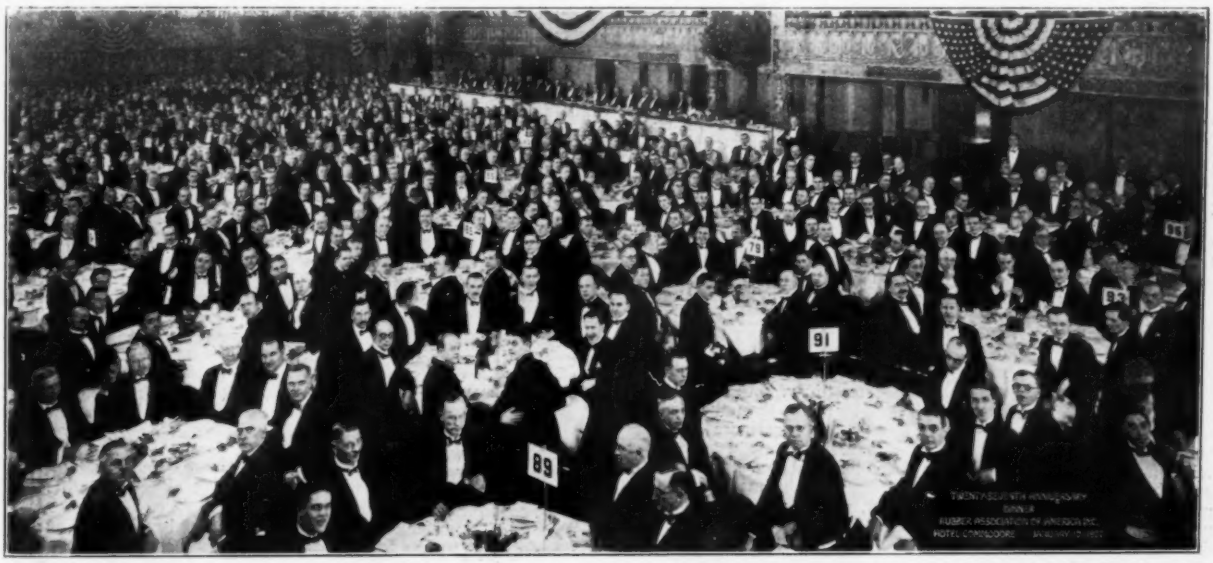
While I have mentioned the tire production of our industry as dependent, let us not forget that in turn the motor car industry could never have developed to any such degree as it has grown had it not been for the development of the successful pneumatic tire for which the rubber industry is distinctly responsible.

After vocal selections by Mr. Thomas, the toastmaster introduced James S. McCulloh, who spoke about the great telephone industry and its dependence on rubber. He said in part:

Mr. McCulloh's Address

Probably there are a great number of men in this room tonight who are older than the telephone itself, because the telephone was born scarcely fifty years ago. It was then a mere toy. Today there are over 17,500,000 telephones operating in the United States alone.

The first telephone message was transmitted by Alexander Graham Bell to his assistant, Tom Watson, in a little attic in Boston over a distance of a very few feet. Today the telephone has reached such a stage of development that a long distance conversation can be transmitted over its wires from the Atlantic to the Pacific and from northern Canada to Cuba, and last Friday we opened service between New York and London.



Twenty-Seventh Anniversary Dinner of The Rubber Association, Held at the Hotel Commodore, New York, N. Y., January 10, 1927

What the future wonder of the telephone art is, only time can tell. The development of the telephone and such associated industries as the radio have not been accomplished by haphazard method. Even the invention of the telephone came from a man with a background of three generations in the science of transmitting and interpreting sound, for Bell, the inventor, was the son of a man who taught the art of speech, and his grandfather before him. All three of them were interested for a number of years in endeavoring to teach deaf mutes to speak, and it was while engaged in that practice in Boston that Bell invented or discovered the principle of the telephone.

Just as the man who discovered the telephone was thoroughly equipped for research that resulted in the original discovery, so has the research been continued through the past fifty years, and in a thorough, systematic manner, and most of the improvements in the telephone art today are the results of experiments carried on over periods of years unceasingly by thousands of scientists who work in the Bell System research laboratories.

Many of the outstanding improvements and developments of

the radio have been achieved more or less as by-products of the work of these scientists of the Bell System, such as the Vitaphone, that remarkable, modern development of the moving picture, which practically reproduces the picture and the voice, both the spoken word and musical selections. The transmission of photographs over the telephone circuit is another one of those things; also the improvement of the phonograph; the loud speaker; the microphone—all these American inventions, backed by American money and initiative have been developed from that original, puny, little toy that Bell invented.

While it was Bell's knowledge and vision which gave the first crude telephone instrument to the world it was the practical business knowledge and the indomitable will and peerless leadership of Theodore N. Vail and his associates in the pioneer development of the telephone industry which brought real achievement to the telephone which was regarded as a toy only fifty years ago.

The history of the Bell System built up by Mr. Vail and his associates can be told briefly in figures that are astonishing. The Bell System is formed of seventeen operating companies operating throughout the United States and Canada, all tied together either by ownership of their voting stock or by intercorporate contracts into one united and complete system. The parent company of the Bell System also controls the Western Electric Co., that very great manufacturing and supply branch which serves the entire system; it produces practically all of the standardized Bell telephone apparatus that is used throughout the country. It also controls the Bell Laboratories, which carry on research and development work for the entire system. It owns the long distance lines stretching between all the great, principal centers of the country. It controls through voting stock all of the operating Bell companies and acts as fiscal agent and banker for the majority of them.

And yet the telephone organization is nearly as publicly owned as any industry can be. Today the Bell System of the United States is owned by upwards of 400,000 individual stockholders. The average stockholder of the entire system owns less than 30 shares. It is publicly owned, as distinguished from government owned.

The Bell System operates approximately 13,000,000 of the 17,000,000 telephones now in the United States and connects directly with most of the others. The United States has 61 per cent of all the operating telephones in the entire world and over these telephones each year approximately 25,000,000,000 telephone connections are made.

I was asked particularly by your president whether we foresaw the saturation point in telephones. It is sometimes hard to discover the saturation point of industry and also sometimes of individuals, and it would be as easy for a telephone man to answer the question as to where the saturation point is as it would be for the rubber man to tell me where the saturation point in automobile tires would be reached. Based on the number of automobiles in the United States, which, by the way, is more than the number of telephones, the ratio of telephones being fifteen to every one hundred in the United States today, both automobiles and telephones are increasing at a greater ratio than the population. With new industries developing, population increasing, becoming more prosperous, it is safe to assume new uses for the telephone will develop and new demands will be made just as new demands are being and will continue to be made for automobiles. The increased use of rubber in their construction and new requirements in other products will increase the rubber industry, making the saturation point only a far distant possibility in my judgment.

As I said before, I am not a prophet nor a great economist. We in the telephone industry, however, look forward with real confidence and serenity to a future of continuing prosperity, a future which should be equally bright for the rubber industry which, like the telephone industry, has met its problems in the past and will have to meet some problems, its valleys and its peaks, in the future. From our point of view, while regulation by government is desirable, in many respects too much government interference with legitimate business is most undesirable. Such interference cannot have other than harmful effects. But if we take away from the politicians and agitators the cause for their agitation, it will rest very largely in the hands of the sound, sane business men of this country to put a stop to much of that interference.

If there remains a single doubt in the mind of any one of my auditors about the commercial and social value of the telephone, let me impress upon you the wonder of this remarkable mechanical contrivance which enables a man, let us say for instance in the rubber business, to ring up his house in the evening from his club, tell the story of how he is detained at the office, unable to get home because something has gone wrong, thus quieting the fears and allaying the doubts of the wife and causing her to give devout thanks for a good telephone service and an absolutely trustworthy husband.

Hon. James J. Walker, Mayor of New York City, the next speaker on the program, was unable to be present.

Address of Mr. Meyers

Professor William Starr Meyers, who occupies the chair of political science at Princeton University, said in part:

It was my pleasure a few nights ago to hear a remarkable talk by General Drum, U. S. A., at present Commandant at Governor's Island. In describing his experiences in France as Chief of Staff of the First American Army, he told of the Argonne offensive in which about a million Americans were thrown forward. The first seven days, they made seven miles. The next eight days they made seven miles, and then something gave way and in the following thirty days they made about forty miles. Yet why was it in that desperate fight, in certain points really hand-to-hand, it was the Americans that finally drove the Germans back?

Gen. Drum said there was one word that explained it, and that word was traditions, that is to say, it was the traditions that the American soldier, that the American citizen had been brought up on that after all were the determining points. Now in the beginning of this country, because it was made by a frontier people and has been continued by a frontier people, that idea of individual initiative has been the basis and has been the tradition, and it was individual initiative and leadership not only in the army at that time but in the early days it was in all departments of the life of this country. That is one great reason why this country grew so rapidly in wealth and in economic and business success, but if we stop to see the present status of affairs in this country and also in relation between this country and other countries in the world, I think you can see and agree with me that it is time to give your leadership toward solving the great problems which are going to strike nearer at home than you can now realize.

Things are not as rosy for this country as might be anticipated. One thing that faces it is the question of the foreign debts. I do not say that we should cancel outright, or say that Europe is right in calling us Uncle Shylock. I maintain that the United States can look any other country in the eye and has nothing to be ashamed of in what took place during and since the war. I believe that it is not a question of our retaining or our regaining self respect, but it is a question not only of our welfare but the welfare of the rest of the world that concerns us.

I know that a number of friends of mine in a nearby university recently came out with a manifesto in which they desired an entire reopening of the whole debt question, and I might say on mere reading of their manifesto I should agree with every word, with one proviso. In the first place, it seems to me that the manifesto was wrongly timed because I would not be in favor of reopening this debt question until those who owe those debts to the United States had acknowledged them as certain countries have done, and then on that common basis we could reopen the entire question for future adjustment. I believe we should state facts, and in no hostility to our allied country of France. I would not open the debt question until France had ratified the Mellon-Berenger agreement, in which the United States has been most generous because we have forgiven France in that agreement about two billion dollars of war debts and will collect only one billion of which one billion six hundred and fifty-five millions is a post-war debt. I should prefer to see France agree to and ratify that agreement and make some effort to pay, and then in reopening the entire question I think it should be on the basis that we do not go to a conference as one power against a great many others, but that we go as one power agreeing upon terms of common equity and justice to all.

The reason I am stressing this tonight is due to the fact that if those debts are paid they cannot be paid in money, much less the interest upon them, much less the principal or interest of the private debts incurred recently in foreign investments.

As I said a few minutes ago, it is only that tradition of leadership that is going to save this country from many false steps. And I believe that in the long run you can rely on that hard common sense, that sense of justice, that lies at the bottom of the character of our people. By the cooperative effort of all our citizenship, many of these great problems, foreign debts, tariff, the form of our judicial procedure, the proper relation of Government to industry, will be solved.

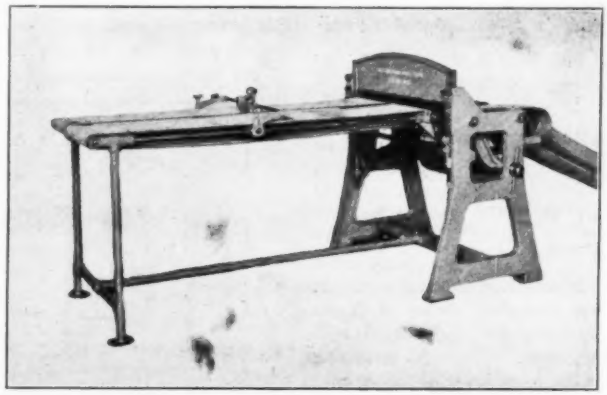
Toastmaster Weston then introduced Arthur "Bugs" Baer who soon had his audience chuckling with laughter over the keen wit and quaint humor expressed in the address of this inimitable entertainer. This concluded one of the most enjoyable dinners ever given by the Rubber Association of America.

Uncured Rubber Stock Cutting Machines

These Machines Represent the Latest Development in Automatic and Semi-Automatic Devices

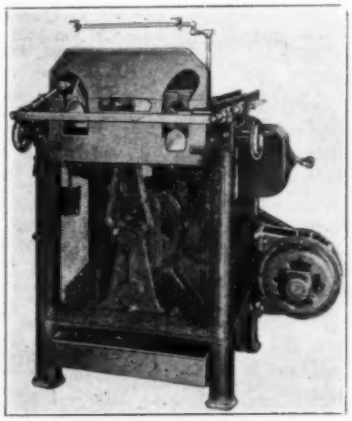
ALL branches of rubber manufacture involve a series of physical processes by which the crude rubber is manipulated through various stages in combination with other materials, until it reaches the final process of vulcanization. One of the most important operations which is necessary before vulcanization, and in many cases completes the cycle after curing, is cutting.

In cutting unvulcanized rubber, manufacturers have had a problem which is peculiarly difficult, due to the nature and consistency of the material. By its plasticity and softness, rubber differs widely from semi-processed materials in other basic industries such as the iron, steel, and automotive fields. For years rubber stock cutting remained a hand proposition in most cases, whereas in others only the crudest and simplest cutting methods were employed.



Utility Cutting and Measuring Machine

Early developments along the lines of machinery were undertaken by individual manufacturers rather than by machine building companies. The reason for this is seen in the wide diversification of rubber manufacturing, which prevented manufacturers of special machinery from securing sufficient market to insure steady production and sale at a profit. With the growth of the industry, however, and the increase of cooperation among competitors, machines have become standardized and many rubber machinery manufacturers have built up a steady market for their products. Some of these machines represent adaptations from those of other industries, changed slightly to meet the particular problem in rubber. Thus today the rubber manufacturer finds machines on the market, either by purchase or lease, for his every cutting requirement.



Black Rock Stock Cutter

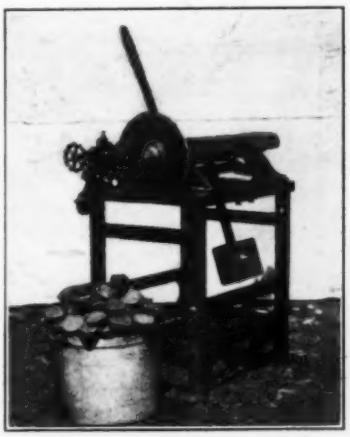
Probably the earliest point in the general process where stock cutting is adaptable is at the calender. If the operation can be performed at this point there is a saving in handling and a saving in labor as well as the advantage of making the work more continuous. A machine for this work which has wide application is the Utility cutting and measuring machine which is available in 24, 34, 44, and 62-inch widths. It is operated as follows: As the stock comes from the calender on a belt or apron it passes under the knife or shear and when the end comes to the electrical contactor, a solenoid operates a high speed positive clutch, and the cut is made. The discharge apron then moves ahead two inches to separate the ends of stock to permit the operator to pick up the cut pieces quickly.

On the intake side of the machine there is a stripper device that lifts the stock off the apron during the cutting period. The usual stoppage for cutting equals from two to four inches of stock travel, so that a slight loop is advisable, although on raw tile stock the material is slipped on a nonsticking apron. The handle on the side of the machine is the control lever to a four speed change gear arrangement. On the 24-inch machine the motor is mounted high and drives the clutch direct. On the larger sizes the motor sets on a base between frames, and the silent chain drive is used.

The machine is built to cut sole stock, heel stock, tile stock and any other flat stock ⅛-inch thick or more. For very thin stocks a measuring wheel is used to make contact for the clutch. These machines permit the speeding up of the calender to at least 120 feet a minute. The cutting length of standard units is up to 10 feet.

Manufacturers of mechanical rubber goods, druggists' sundries, and heels have many cutting problems, particularly that of producing the blank for molding cheaply and efficiently. The Black Rock stock cutter has been widely adopted for this purpose. It is designed to cut tubed rubber stock for plumbers' molded supplies, balls, heels, hose washers, etc. It is built for continuous service and will meet expectations in the matter of maintaining uninterrupted volume production.

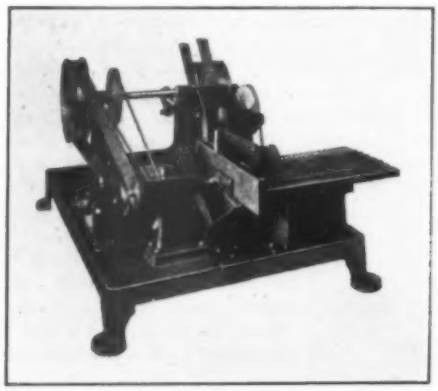
A bench power machine particularly suitable for cutting plugs for small mold work is the Don Lee tube and plug cutter. It is indispensable where quantities of short tubes and plugs of equal lengths are required for a product such as eraser rubbers. Small hard rubber parts such as screw tops for batteries, crutch tips, and table and chair leg tips, which are molded from small blanks sliced from tube stock, may be cut advantageously with this machine, which delivers the stock rapidly in clean cut, accurate sections. The stock bench travels back and forth by power and holds several strips of stock at a time for multiple cutting at each stroke.



Mollart Stock Cutter

The Mollart hand power machine cuts a wide variety of blanks from tubed rubber neatly and efficiently. A short strip of the tubed stock is laid in the channel of the sliding table and a slight

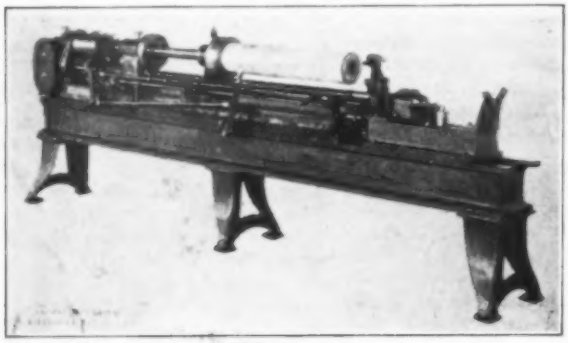
pull of the hand lever revolves the circular blade through the stock. At the same time the table is drawn toward the blade, clearing the gage which determines the thickness of the piece being cut. The cut stock drops into a container and the counter balance causes the table and blade to return to position for the next cut. With this machine one man can cut over 50 pieces per minute, all within two per cent of the correct weight.



Don Lee Tube and Plug Cutter

The limit to the purposes for which the tubing machine may be used is determined only by the facilities available for handling and cutting the raw stock as it emerges from this economical producer. Tubing, tire treads, jar rings, or any irregularly shaped stock can be cut and handled by the Smith automatic stock cutter with traveling apron and deflector attachments. The stock emerging from the tubing machine is conveyed by the apron until the forward end strikes an automatic stop, adjustable for any desired length of cut. This contact brings into action the automatic cutting off attachment which cuts the stock to the required length. The instant the stock is cut off the automatic deflector pushes the length from the apron.

The machine is made in two styles, one with a hack saw type knife, and the other with a circular knife. The circular knife is used on large diameter stocks or for tire tread work, in fact on any heavy material for which the hack saw type is not practical.



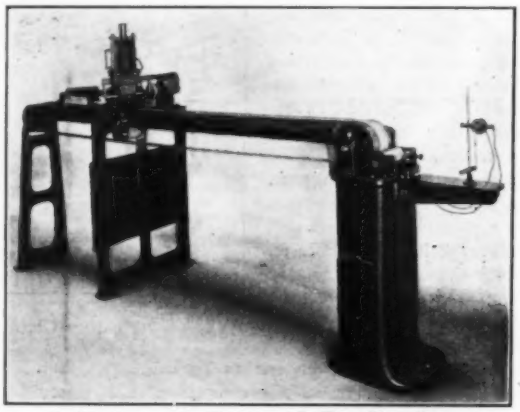
Black Rock Roll Stock Cutting Machine

Other features of the machine are electrical control, automatic operation, and its capacity range from 6-inch lengths to 24 to 40 inches, where lies its greatest field.

The cutting or slitting of rubberized uncured fabrics is necessary in almost every branch of the rubber industry. In tires it is done on bead filling, flap stocks; in footwear on joining strips or piping; in mechanicals for insulating tapes; and also for tire repair gums which are wound with a holland liner on a mandrel, then cut to the desired width. The Camachine slitter is probably the machine most generally used as it cuts accurately and efficiently as the material is rolled from one mandrel to another.

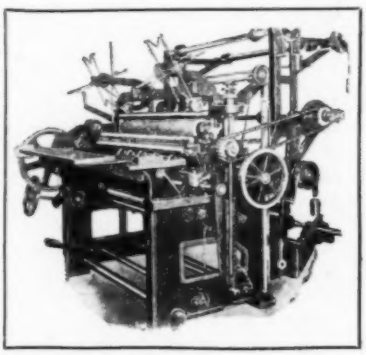
The improved heavy duty slitting and roll-winding machine is designed for manufacturers of tires, mechanicals, belting, hose, brake lining, etc. It handles both [illegible] friction coated fabrics as well as paper and burlap for [illegible]pping purposes. A medium duty machine handles lighter weight materials for tires, insulating tape, etc., either coated or plain, as well as insulating materials of all kinds, together with paper for wrapping purposes. Still another machine of this group, the duplex combination type, is for varnished cambric, adhesive tape, thin rubber, tacky coated fabrics in general, and materials with a peculiar finish or slippery surface.

There are, however, machines which cut on the roll with a stationary knife and moving carriage. The Black Rock roll stock cutting machine is a very efficient type. The roll of calendered rubber is slid over a steel mandrel and supported in a circular chuck which gives it rotation through the power connections at the left end of the machine. The cutting knife moves only inwardly and outwardly and cuts only at the end of the mandrel. The rolls of cut stock are automatically dropped on a bent rod held in a heavy weight which rests upon the floor. Thus when the advancing chuck has practically reached the knife all of the cut rolls are upon the rod and can be taken off for immediate use. The machine will operate either a straight or circular knife. By a series of gears the feeding in of the knife may be regulated to suit the nature of the work. In other words the rate of feed of the knife may be at the rate of 1/16- or ¼-inch per revolution of the mandrel.



Smith Automatic Cutter with Traveling Apron

This machine will cut frictioned fabrics of various textiles and it is almost entirely automatic in action. The lever in front is used to start the rotation of the work and sets in motion a gear train which furnishes a quick return of the work to the head stock. At the point where the entire work covers the mandrel the feeding mechanism is automatically reversed and the stock is fed intermittently and automatically forward. At the same time the knife is brought into action.



Cameron Slitter and Rewinder

This article covers only the general types of uncured stock cutters that are on the market. There are, however, other machines, but these have been developed for special purposes by the companies using them, and are therefore not sold to the rubber trade generally.

THERE ARE IN THE UNITED STATES 3,001,825 MILES OF HIGHWAYS, the number of miles of surfaced highway being 560,000.

The Statistical Position of Crude Rubber[1]

FUNDAMENTAL to any argument on future supplies of crude rubber is the solid and irrefutable fact that the only sure way of increasing supplies is to plant more trees. All the laws in the world and all the statistics will not avail to fill two cups of latex where only one is to be had now. Lt. Col. Kunhardt makes much of the point that within one or two years we will see a maximum reached in the world's existing supplies of rubber. This peak, estimated for all sources, will be 640,000 tons. From 1928 on he foresees a slow but steady decline. For the year 1926 the world's rubber production is given as 600,000 tons. The peak production will be reached in 1927 and thereafter until 1931 we can expect only a few thousand tons above the figure for 1926. Why not an increase? For the simple reason that replanting of old and planting of new areas has not kept up with the natural wastage and deterioration of old plantations. It is estimated that to replace the wastage due to soil erosion, disease, storms, poor bark renewal and other causes, it would require a planting now at the rate of some 200,000 acres a year so as to maintain the minimum to be reached by 1932. In order to increase the production by even as much as 10 per cent above this minimum to meet the 10 per cent estimated rise in annual world consumption, the rate of planting new areas now would require an additional 400,000 acres a year, thus making 600,000 acres of new plantings every year to meet world requirements six years from now and thereafter.

THE old truism regarding those who are venturesome enough to enter into the realms of prophecy is perhaps applicable in a greater degree to rubber than to any other subject, the lack of definite statistics bewildering even those who are in closest touch with this particular industry.

The success which attended the forecasts of Lt. Col. Kunhardt, made four years ago, when the price of rubber was at its lowest ebb, has been all the more remarkable. He makes his observations from first hand knowledge and uses a keenly analytical mind to appraise the present and past, and to forecast the immediate future position of the plantation industry.

What the records of new plantings reveal is startling. It is necessary to remember that it takes from 5 to 6 years to bring an area into production. And an average maximum yield per acre is not reached before the 10th year of growth. The records show that for the years 1919 to 1926 inclusive only 800,000 acres of new rubber have been planted—about 100,000 acres a year. Apparently it must be concluded that plantations have been discouraged during the past decade to plant up new areas. It may be fear of American competition or wild propaganda purporting to show plans for American plantations on a million acre scale, or possibly a result of paying out all profits as dividends. Whatever the reason, the fact remains that new plantings during the past eight years have not sufficed to meet deterioration, wastage, and increased consumption.

It was pointed out in a previous issue[2] that a fair price for rubber planters was nearer 50 cents a pound than 36 cents, as indicated in recent discussions of the Stevenson Act. To encourage new plantings manufacturers and the consuming public should not begrudge a fair return on capital invested in plantations. This will ensure future supplies at an equitable selling price and fair profit.

Lt. Col. Kunhardt bases his calculations on what he calls real "wear-and-tear" consumption of the commodity. From tables of car registrations and gasoline consumption in the United States he adduces the fact that the wear-and-tear consumption has been and is increasing steadily at a fairly constant average rate per annum. This rate is about 12½ per cent; in other words there is evidence to show that every year an additional consumption of new rubber at the rate of about 12 per cent will have to be provided for. This method of using the real wear-and-tear consumption seems to be an excellent measuring stick by which to judge the future position of rubber. Too much reliance on imports of raw rubber or its "absorption" by manufacturers in a single year has been unsatisfactory when taken as an index of actual consumption. Also by directing attention to actual wear-and-tear consumption, the factor of a hand-to-mouth buying policy can be discounted. The world's total "invisible" stocks of rubber, according to the author, are at present as much below normal relative to the rate of consumption as they were two years ago.

Another important assumption made is that, owing to natural causes of destruction and deterioration, the present effective area of plantation rubber is about 4,000,000 acres in bearing. In addition to this there is an immature reserve of about 400,000 acres. Increasingly large areas are going out of production, permanently or temporarily, every year. Ceylon and the Dutch East Indies have already, it seems, reached their maximum production. These two sources now furnish about 50 per cent of the world's supply. The rate of replenishment, as stated above, is very far from meeting this inevitable wastage and deterioration of old plantations.

The author has no fear of any so-called motor car saturation in the United States. This sentiment is supported by our own experts. According to predictions made by the National Automobile Chamber of Commerce at least 4,500,000 cars and trucks are to be produced in 1927. They predict also that no saturation point is yet in sight and the outlook for many years is very bright. Everything in fact—even the maintenance of a steady petroleum supply—points to a constant increase in consumption of rubber.

But stocks in London are estimated at 45,000 tons, which the author declares are 30 per cent lower than should be for the well-being of the trade. For 1927, the prediction is made that production will exceed wear-and-tear consumption by only 20,000 tons. After that only a steady rise in price of crude rubber will maintain a balance in production and consumption.

Three important factors influencing the price of rubber are: the miscalculation of some buyers or sellers; the operations or psychology of the speculator; and the general business activity in America, where 80 per cent of the rubber is consumed. These factors are difficult or impossible to control.

It is asserted that a serious miscalculation of the buyers in 1923 and 1925 was partly responsible for the rise in the price of rubber. Sellers also come in for a share of the blame. They made forward contracts too soon in 1924 and 1925 just as the price began to advance beyond the maximum pivot price. Bankers who refuse to assist both buyers and sellers in times of emergency must take a good share of the blame, too. However, unless bankers are kept correctly informed of the true picture of the situation by those who

[1] "A Review of The Rubber Position." By Lt.-Col. J. C. G. Kunhardt, November, 1926. Published by the *Investors' Chronicle*, 8 Drapers Gardens, London.

[2] "Cooperative Rubber Buying," THE INDIA RUBBER WORLD, January 1, 1927, pp. 193-4.

ought to know, they cannot be greatly blamed for withholding aid.

As to speculators, the author distinguishes between an "inside" and an "outside" group. The inside speculator is a legitimate and helpful individual who is directly connected with the industry. The outsider is in no way connected and is considered a market parasite. The latter's operations always tend to upset the balance in the market. Most often his gamble is based on miscalculations.

As to business conditions in America, it seems that prosperity will be continued for the present and the immediate future.

The deductions and conclusions of the review can be summarized as follows:

1. World production of rubber for 1926 is estimated at 600,000 tons. The real wear-and-tear consumption will be 580,000 tons. Available for replenishment of stocks for current year, 20,000 tons.

2. World stocks, both crude and manufactured, can safely be assumed to be at present below normal in relation to the present rate of consumption. Visible stocks of 45,000 tons in London are reckoned as about 30 per cent below what should be a normal figure.

3. Unrestricted rubber production for 1927 is estimated at below 640,000 tons. It is estimated that consumption in 1927 (with a reasonable price for rubber) will exceed this production—if general business conditions in the United States receive no setback.

4. The production figure for 1927 is estimated to be the peak or highest to expect from the world's present known sources of supply. No increase could be expected before the next 5 or 6 years.

5. Production in 1928, if stimulated by rising prices, may remain at level of 1927. After 1928, world production must show a steady decline to a minimum of about 625,000 tons in 1931.

6. Meanwhile, other things being equal, with world trade steadily improving, consumption which has shown an average yearly increase of 16.7 per cent for the last 15 years and about 12½ per cent for the last 5 years, should maintain an increase for some years to come at the average rate of at least 10 per cent a year, provided the rubber required can be had at reasonable prices.

7. In order to make production and consumption equal, it will be necessary to have a considerable rise in the average price of crude rubber during the next four or five years, but the rise will probably be accompanied by wide fluctuations.

8. It is estimated that probably, early in 1927, real wear-and-tear consumption will exceed production, a condition unknown to the market for nearly seven years. When the two will again balance is very difficult to foretell from present data.

9. Restriction of output may yet prove beneficial to manufacturer as well as producer, and to the British producer more than to the Dutch. The only increase of plantation output noted during the past six months has been from countries or areas which have been restricting their output. These areas are the only ones from which to expect any material increase during the next five years.

10. It must be an axiom that estimates of production and consumption should be accurately gaged for a five or six year period in order to reduce price fluctuations to a minimum.

Real wear-and-tear consumption and not merely the "absorption" by manufactures should be the basis of calculations. Figures for the latter are too often misleading. Similarly, but less important, it is the real production of estates, and not merely the exports from producing countries that should be considered. Reasonable stability in price can only be expected when real consumption balances, more or less, with real production.

THE AUSTRALIAN RUBBER CO., LTD., 19 BLIGH STREET, SYDNEY, Australia, is capitalized at £250,000, and has been organized for the purpose of manufacturing all kinds of ordinary rubber goods. The company intends however to specialize in the production of road paving blocks, composition floor coverings, and an improved type of disk wheel for motor and other vehicles. These wheels are said to be very resilient, as they are made of solid rubber on the outside and rubber-cork composition on the inside.

Rubber Compounding

Webster Norris

For the benefit of readers interested the following examples of compound figuring are in continuation of the article on rubber compounding in the January issue.

Molded Article Stock

SECOND EXAMPLE. The formula is written in volumetric percentages and the extensions for each item are successively made to ascertain their weight percentages and mixing weights. This is done by multiplying the volume percentage of each ingredient by its respective specific gravity to ascertain the specific weight of the item. The total of these volume weights shows at once the specific gravity of the mixing. On this total as a basis the weight percentages of each item can be figured as shown in the first example.

These percentages generally come with fractional endings. Therefore the mixing weights are written to correspond by adjusting them fractionally to within one-quarter of a pound.

INGREDIENTS	Volume Per Cent	Specific Weights	Weight Per Cent	Mixing Lbs. Oz.
Rubber	50.00	46.50	31.00	31—0
Reclaim	15.00	18.30	12.50	12—8
Mineral rubber	5.00	5.20	3.50	3—8
Whiting	27.00	72.90	48.50	48—8
Sulphur	3.00	6.12	4.08	4—0
Accelerator	0.05	.63	0.42	0—8
Totals	100.05	149.65	100.00	100—0

Tire Tread

THIRD EXAMPLE. The batch is written on 100 pounds of rubber as the first item. The other ingredients follow according to recommended proportions and the judgment of the compounder. The weight percentages are figured on the total batch weight in the usual way and the volume percentages corresponding, by dividing the weight of each ingredient by its specific gravity, thus getting its specific volume and ultimately its volume percentage with reference to the total of specific volumes.

INGREDIENTS	Batch Weight	Weight Per Cent	Volume Per Cent
Rubber	100.0	50.00	65.50
Reclaim	20.0	10.00	10.00
Carbon black	40.0	20.00	12.60
Zinc oxide	10.0	5.00	1.12
Sulphur	3.5	1.75	1.05
Accelerator	0.5	.25	0.25
Mineral rubber	6.0	3.00	3.50
Clay	16.0	8.00	3.64
Pine tar	4.0	2.00	2.34
	200.0	100.00	100.00

Specific gravity 125.

Respective volumes of the rubber in the reclaim and its softeners and pigments are figured from their known percentage amounts just as though these were items of a separate mixing. In other words they may be treated as so many items in the general formula with suitable gravities assigned to them.

FOOTWEAR PRICES SIXTY-EIGHT YEARS AGO

The recent cut in footwear prices brings the cost of rubbers not far from what it was sixty-eight years ago. A receipted bill, brought to light in Boston, shows that on February 28, 1859, Messrs. Silas Pierce & Co., of Boston, bought from John Mansfield & Co., manufacturers and dealers in boots and shoes, Codman Buildings, 38 Hanover street, Boston, 12 pairs of women's rubber overs at 75 cents per pair, 12 pairs of misses' rubber overs at 60 cents per pair, and 12 pairs of children's at 50 cents.

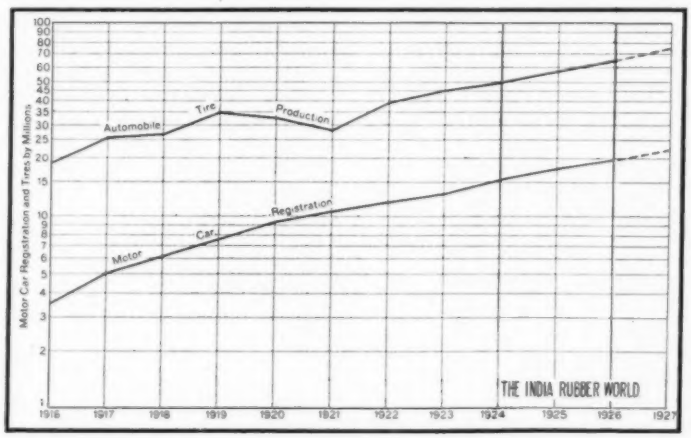
These are wholesale prices, and today's list on the same shoes is 75, 68 and 60 cents, respectively. Only in 1859 the wholesaler gave a discount of 25 and 5 per cent, which is rather more than the largest buyer gets today. Volume buyers of rubber footwear get approximately 19 per cent as a maximum discount.

The National Automobile Show

THE Twenty-Seventh Annual National Automobile Show was held under the auspices of the National Automobile Chamber of Commerce in Grand Central Palace, New York, N. Y., January 8 to 15, 1927, inclusive. It was a very great success.

The list of exhibitors included 70 of vehicles, 148 of accessories and 49 of shop equipment. The latter occupied a special area, admission to which was charged during the early afternoon hours.

In general, the influence of the "European Type" was distinctly noticeable in the matter of body and mechanical design first introduced by the Overland Whippet. The six-cylinder engine still leads with a marked tendency toward the more general introduction of the eight-cylinder type. Automobile manufacturers have embodied very many improvements in their cars and are consistently passing on to their customers, by reduced prices, the savings effected by the progress in manufacturing and selling. The absence of open type cars was noticeable, in fact, 74 per cent of the cars now produced are of the closed styles. This is 4 per cent more than at last season's show. Practically the low cost closed model cars seem to characterize the output of all of the makers.



Automobile Registration and Tire Production, 1916-1927

Motor Car Registration and Tire Production

The accompanying chart compares on a ratio basis graphs of motor car registration and tire production in the United States from 1916 to 1926 inclusive with the estimated production of each for 1926.

Year	Motor Car Registration	Tire Production	Year	Motor Car Registration	Tire Production
1916	3,512,596	18,500,000	1922	11,500,000	38,200,000
1917	4,983,340	25,850,000	1923	12,880,000	45,000,000
1918	6,146,617	21,600,000	1924	15,230,000	50,000,000
1919	7,558,848	34,300,000	1925	17,500,000	55,750,000
1920	9,211,295	32,100,000	1926	19,550,000	63,000,000
1921	10,448,623	27,267,000	1927	*21,500,000	*70,500,000

* Estimated.

Balloon Tires Standard Equipment

The tire equipment feature of the show was the decided trend toward the use of balloon tires as standard. Last year on many makes of cars balloon tire equipment was offered at a small increase of cost. This year there are scarcely a half-dozen cars which are not fitted with balloon tires as standard. The use of balloon tires on enclosed cars involved the problem of silencing the annoying hum or vibration that proceeds from the rear wheel road contact. This annoying noise is not produced when high pressure cord tires are used, but results from the increased tread contact of the less inflated and more flexible balloon tires.

Silencing Vibrations

In 40 per cent of the cars exhibited rubber pads are being used to absorb vibrations, located in most instances between the engine rear supports and their point of attachment to the chassis, where torque is developed. In one instance a patented rubber device is interposed for the same purpose between the engine shaft and the transmission on the driving shaft. In a few instances rubber blocks are being used to support the rear springs in specially designed shackles. In another instance the radiator is cusshioned on elastic rubber pads.

Outlook for 1927

In regard to the outlook for the automobile business in 1927, Alfred Reeves, general manager, National Automobile Chamber of Commerce, is quoted as stating "The automobile business looks forward to a year equally as good as 1926, but with probably a larger production of trucks and buses than last year and a steady increase in exports." The following data from the same source cover the salient points of the automobile industry for 1926.

MOTOR INDUSTRY RECORD FOR 1926

PRODUCTION

Total production	4,480,000
Passenger cars	3,950,000
Motor trucks	530,000
Production of closed cars	2,926,000
Per cent closed cars	74
Wholesale value of cars	$2,622,450,000
Wholesale value of trucks	$434,300,000
Wholesale value of cars and trucks	$3,056,950,000
Tire production	63,000,000
Wholesale value of motor vehicle tires for replacement	$775,000,000
Wholesale value of parts and accessories for replacement	$600,000,000
Average retail price of cars	$886
Average retail price of trucks	$1,090
Number of persons employed in motor vehicle and allied lines	3,500,000
Motor vehicle taxes	$735,226,000

REGISTRATION

Motor vehicles in United States	22,330,000
Passenger cars (State reports)	19,520,000
Motor trucks (State reports)	2,810,000
World registration of motor vehicles	27,500,000
Per cent of world registration in United States	81
Motor vehicle registration on farms	4,852,000
Miles of surfaced highway	560,000
Total miles of highways in United States	3,001,825
Motor buses in use	80,000
Motor buses produced	15,000
Schools using motor vehicles	15,332
Street railways using motor buses	344
Buses used by street railways	7,000
Buses used by steam railroads	510
Steam railroads using motor buses	41
Railroads using gasoline rail motor coaches on short lines	190

The show stimulated public interest by the high artistic merit and mechanical perfection of the models shown. Dealers are enthusiastic regarding next season's sales outlook for a gigantic demand. An increase of 10 to 12 per cent is estimated.

Automobile Accessories

The exhibits of automobile accessories occupied half the area of the show. Every device and appliance of importance seemed to have its place among the 148 exhibits. A new feature of the show was the segregation of New York shop exhibitors. In this section were displayed machines, tools and appliances of special interest to garage men, automobile machinists, vulcanizers, car and truck owners. This special arrangement greatly facilitated the convenience of exhibitors and users of the appliances shown.

Motor Car Registration—1926

THERE were 22,273,643 motor vehicles registered in the United States during 1926, according to the annual statistical review of the motor car industry by The B. F. Goodrich Rubber Co. This report shows an increase of 2,044,618 over 1925 when 20,229,025 motor vehicles were registered. The percentage of new motorists was not as great as it was during the previous year.

The estimated total of passenger cars and trucks manufactured during the past year amounts to 4,497,390. This figure shows an increase of 297,390 over 1925. The 1926 production added to the total registration in 1925 gives a figure 2,452,772 higher than the actual registration during 1926. This would indicate that 2,452,772 motor vehicles were discarded or put out of running condition in the preceding 12 months.

The mortality on motor vehicles was 23 per cent higher in 1926, but this does not change to any appreciable extent the average of motor car life, which still runs between 7 and 8 years. This is significant of the high standard of quality that is being maintained by the manufacturers of motor vehicles.

For the first time in the history of the motor car industry registrations fell off in two states. South Dakota and Utah registrations for 1926 were under the figures given for 1925. Another new state, however, joins the million-or-better class. Texas is the seventh state to go over the million mark in registrations.

New York retains its lead with 1,798,091 motor vehicles, an increase of 9.8 per cent over 1925. California's percentage of increase was higher than New York's and it follows New York in rank. Ohio jumped from 4th place in 1925 to 3rd place in 1926 with 1,510,000. Pennsylvania's registration in 1925 was 67,000 higher than that of Ohio, but in 1926 Ohio passes Pennsylvania with a 16.2 per cent gain, while Pennsylvania's gain is only 8.5 per cent.

Florida made the highest per cent gain of any state. Its increase was 31.5 per cent over 1925. Florida's nearest competitor was Maine with a 22.3 per cent gain. Florida's 1926 registration shows a motor vehicle for every 2.2 persons, the highest of any state showing. California shows a car for every 2.4 persons.

Taking the registration total and dividing it into the estimated 1926 census totals for the United States shows that there is one motor vehicle for every five inhabitants. Dividing the square mile area of the country into the registration figure shows a little better than 7 motor cars to every square mile.

The automotive industry remains first in rank among all business enterprises, based on the value of its finished products. The estimated wholesale value of the products of the motor vehicle and allied industries approximates four and a half billion dollars.

A continuation of conservative policies by manufacturers in establishing production schedules will insure another satisfactory year for the automotive industry even though the total volume of sales of both complete units and accessories may be slightly lower than in 1926.

Fundamental business factors are sound. The use of the motor vehicle as a medium of transportation is on the increase with more buses and more trucks going into use every day. Over a half million miles of surfaced highways today form a veritable network of motor transportation lines over the country and nearly nine billions of gallons of gasoline were consumed by U. S. motor cars in 1926.

State registrations for 1925 and 1926 are given below, together with the rank of each state and its percentage of gain over 1925.

State	1926 Rank	1925	1926	Per Cent Increase
Alabama	31	194,809	225,651	15.8
Arizona	44	67,880	74,400	9.6
Arkansas	33	185,075	209,419	13.2
California	2	1,443,985	1,614,479	11.8
Colorado	27	244,227	252,787	3.5
Connecticut	22	253,019*	280,000	10.7
Delaware	48	40,603	45,100	11.1
District of Columbia	39	102,337	110,000*	7.4
Florida	18	340,000	446,930	31.5
Georgia	23	247,670	277,910	12.2
Idaho	41	81,290	95,500*	17.5
Illinois	5	1,267,400	1,370,351	8.1
Indiana	9	719,378	774,425	7.7
Iowa	10	663,500	699,860	5.5
Kansas	15	459,452	491,223	6.9
Kentucky	24	260,471	277,111	6.4
Louisiana	28	205,500	239,500*	16.5
Maine	35	140,605	172,020	22.3
Maryland	26	242,687	264,018	8.8
Massachusetts	8	764,338	826,224	8.1
Michigan	6	1,006,371	1,122,828	11.6
Minnesota	14	568,733	627,256	10.3
Mississippi	32	176,000	210,500	19.6
Missouri	13	605,350	640,141*	5.7
Montana	40	96,689	104,984	8.6
Nebraska	20	336,500	363,024	7.9
Nevada	49	21,300	23,999	12.7
New Hampshire	43	81,250	88,976	9.5
New Jersey	12	579,948	652,459	12.5
New Mexico	46	49,003	54,610	11.4
New York	1	1,637,670	1,798,091	9.8
North Carolina	17	374,249	391,000	4.5
North Dakota	37	144,035	158,000*	9.0
Ohio	3	1,300,000	1,510,000	16.2
Oklahoma	16	450,000	490,000*	8.9
Oregon	29	215,826	234,119	8.5
Pennsylvania	4	1,367,092	1,482,837	8.5
Rhode Island	38	101,308	110,734	9.3
South Carolina	34	169,577	181,105	6.8
South Dakota	36	168,870	168,120	—0.4
Tennessee	25	248,121	276,097	11.3
Texas	7	958,159	1,046,415	9.2
Utah	42	91,500	91,380	—0.1
Vermont	45	69,507	74,071	6.6
Virginia	21	291,810	321,879	10.3
Washington	19	338,349	363,279	7.4
West Virginia	30	212,805	227,678	7.0
Wisconsin	11	596,177	663,335	11.3
Wyoming	47	47,700	49,878	4.6
		20,229,025	22,273,643	10.0

* Estimated for year.

PLAIN AND NON-SKID SOLID TIRE TREADS

That plain tread solid tires may rival non-skid types in efficiency was made plain by L. W. Fox at the Boston meeting of the Transportation and Service Session of the Society of Automotive Engineers. Plain treads, it was held, are more economical and satisfactory in all classes of front wheel service. Tires having the tread broken up with a design yield sooner to uneven wear, overload, excess speed, and mechanical irregularities. Maximum mileage is attained when tires have a continuous tread and are used at moderate speed on improved roads.

Non-skids may afford better traction, but at the expense of mileage. They are, however, the better type for long-distance hauling, where much heat is developed, as they have greater radiating surface; and their traction on unimproved roads is obviously greater. The non-skid pattern preferred in good manufacturing practice is one that in revolving easily relieves itself of soil so that its road contact may be always quite clean.

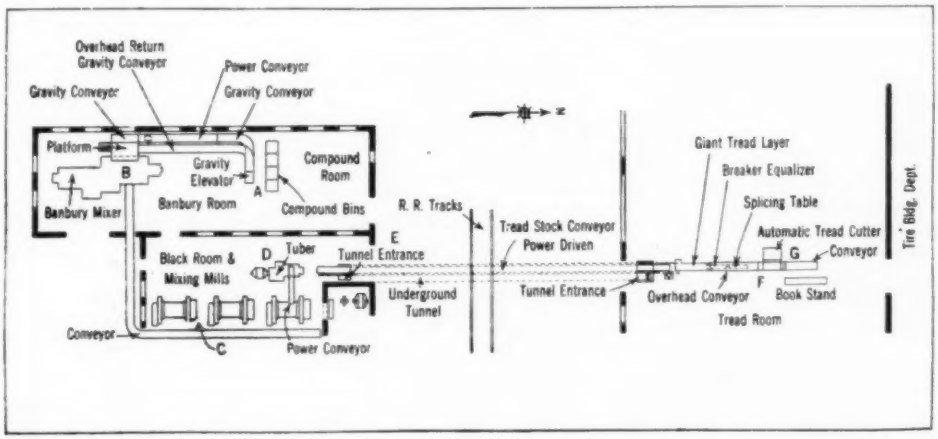
It has been found impractical to make definite recommendations of solid tire equipment for vehicles of a particular load rating because of the wide variances of wheelbases, location and type of body, and actual load borne; and, too, because operators commonly disregard such advice, having their own widely-divergent ideas about economical loading, etc.

One common cause of solid tire failure is excess speed, causing rapid and uneven wear. It also generates heat faster than it can be dissipated and causes the compound to melt and form a gas that ruins the tire by blowing through tread or sidewall. Another cause is overload which undercuts the sidewall, a trouble which once started will increase even though the loads be lightened. Bent rims can start separation and tire chains cause excessive strain; and trouble can often be traced to improper wheel or axle alinement, loose wheel bearings, bushings, or steering gears, or to faulty brakes.

Continuous Production of Tire Treads

SUBSTANTIAL savings are now being made in the tire industry by the use of internal mixers, conveyers, tubing machines, and tread cutting devices, to produce a completely assembled tire tread from the raw materials without a break in the production chain.

Internal mixers have been tried out in rubber factories as early as ten years ago. The first models were small and had only a capacity of a 100 to 200 pound batch, and as a mill was required to complete the mix, they offered no advantage save that of cleanliness. The introduction of new and larger models, however, has revived interest in the internal mixer, and today we have such machines as the No. 27 Banbury which will take 600 pounds of crude rubber in a batch, and from 700 to 1,000 pound batches of rubber and compounds. Thus, even with the necessity of adding curing agents on the batching mill, the great saving in power, handling, and the health and cleanliness features make it an essential part of the mixing equipment of the modern rubber mill.



(A) Batch weighing. (B) Banbury mixing. (C) Mixing mills. (D) Tubing treads. (E) Conveying treads through tunnel. (F) Applying cushion and breaker. (G) Measuring and cutting treads.

Unlike the two-roll open mixing mill, the Banbury lends itself to continuous operation. An example of a tread producing unit employing the Banbury is seen at the Gillette Rubber Co., tire manufacturer, of Eau Claire, Wisconsin. Under this method, the production of a tire tread starts with the weighing out of the batch of compound and does not cease until the finished tread, with breaker and cushion applied, is delivered to the tire builder in a building forty feet distant from the one where the stock is mixed.

At the point *A* in the diagram, the batch of compound is weighed out. Here an initial saving is made by the use of a power conveyer which carries the pan of compound and rubber to the hopper of the mixer *B*, the pan being returned by a gravity conveyer. After the mix is completed, the stock is released from the mixer and dropped on to a conveyer belt which carries it to a line of mixing mills shown at *C* in an adjacent room. Some installations have been made in other factories where the mixing mill for batching out is located directly beneath the Banbury. Here the curing agents are added.

At Gillette, the warming mills have an automatic stock take-off which feeds the tubing machine automatically. This automatic feeder can be controlled by the tube machine operator to get any quantity of stock he desires for the proper weight tread.

From the tubing machine *D*, the tread and sidewall are run in one piece onto a belt conveyer *E* which conveys the treads through an underground tunnel, under railroad tracks, to the main factory building forty feet distant. As the tread stock emerges from the tunnel it enters a special machine *F* which applies the cushion and breaker to the tread and stitches it in place by a number of stitchers placed at different angles. It will be noticed that the usual water cooling unit is omitted in this installation, as the forty-foot trip through the tunnel furnishes the required cooling and shrinkage.

After the breaker and cushion are applied the next operation is cutting the tread to length. This is accomplished by an electrically operated measuring and cutting machine shown at *G*. The stock runs off the end of the conveyer in a loop and over the entering roll of the tread cutter. The measuring apron carries the stock down and through a pair of knives or shears on an angle of 40 degrees. When the stock has reached the predetermined length it stops, the knives automatically drop, and the cut is made on a 45 degree skive. The difference in angle of cut and angle of stock is due to the compression of the soft stock under the knife action. When the cut is made the tread moves forward so as to separate the ends from the following stock by four inches.

From this point the treads are booked and conveyed to the tire building department ready to be applied to the casing by the tire builder.

The savings of such a unit as herein described, over the ordinary rubber factory methods which were in use a few years ago, can be visualized by summing up the operations and steps in each method.

For instance under the old method of producing a tire tread the following operations were standard practice: (1) Breaking down 200 pounds of rubber. One hour on mill. (2) Weighing compound and rubber. (3) Trucking compound to mixing mill. (4) Mixing 200 pounds, twenty minutes. (5) Cut off stock. Place on cooling rack. (6) Talc stock. Pile on skid. Truck to storage room. (7) Truck stock to calender or tuber. (8) Warm up on warming mill. (9) Calender or tube. (10) Cut to approximate length by hand shears. (11) Book or roll in liner. (12) Truck to tire assembly department. (13) Remove tread. Measure and weigh. (14) Apply breaker and cushion. (15) Place in book. (16) Deliver to tire builder.

Under the continuous method the operations are as follows: (1) Break down 600 pounds rubber. Twenty minutes in Banbury. (2) Weigh compound and rubber. (3) Dump batch in Banbury. (4) Mix 20 minutes. Capacity 1,000 pounds. (5) Convey to tubing machine. (6) Tube. (7) Apply breaker and cushion. (8) Cut. (9) Book. (10) Deliver to tire builder.

American Rubber Technologists

Research Chemists

RAY PUTNAM DINSMORE, *b.* Tewksbury, Mass., April 14, 1893. B. S. in Chemical Engineering (M. I. T.) 1914; experimental department, The Goodyear Tire & Rubber Co., Akron, O., 1914; chief compounder, The Goodyear Tire & Rubber Co., Bowmanville and Toronto, Can., 1916; chief chemist, The Goodyear Tire & Rubber Co., Los Angeles, Cal., 1919; chief chemist, The Goodyear Tire & Rubber Co., Akron, O., in charge chemical work all Goodyear factories and director of research, 1921 to date; member, Am. Chem. Soc., chairman Rubber Division 1926-27; Inst. Rubber Industry Gt. Britain; Exchange Club, Akron, O. Address, 877 Hereford Drive, Akron, O.

THE rubber industry has long been guided in its development by the results of chemical and engineering research.

THE INDIA RUBBER WORLD *plans to record the names, academic attainments and scientific and technical accomplishments of American rubber technologists.*

The personnel will comprise research chemists, physicists, analysts, chemical, electrical, mechanical, process and production engineers, and technical superintendents.

Walter Linwood Sturtevant, *b.* Bangor, Me., 1879. B.S. in Chemistry, U. of Me., 1908; chemist on arc light electrodes, G. E. Co., Lynn, Mass., 1908-10; chief chemist and asst. supt. Sterling Tire Co., Rutherford, N. J., 1910-12; chemist, Manhattan Rubber Mfg. Co., Passaic, N. J., 1912-15; asst. supt. mill and calender depts., 1915-1917. Chief chemist and director of laboratories 1917 to date. Author of papers before Committee D-11 of the A. S. T. M. on development of test indicating life of rubber belts, 1925-26; member, Am. Chem. Soc.; Committees D-11 and D-13 of A. S. T. M.; chairman Sub-Sub Committee 1 A. S. T. M.; Crude Rubber Testing Committee, Am. Chem. Soc.; Sectional Committee on Specifications for Cotton Rubber Lined Hose, representing A. S. T. M.; Beta Theta Pi. Address, 308 Aycrigg ave., Passaic, N. J.

David Spence, Ph.D., A.R.T.C., F.I.C., F.R.S.A., *b.* 1881, Udny, Aberdeenshire, Scotland. Educated at Royal Technical College, Glasgow, and at Universities of Berlin and Jena. Investigated chemistry of rubber at Liverpool Univ.; director research laboratories, the Diamond Rubber Co., Akron, Ohio, 1909; and of those of the Amalgamated Diamond and The B. F. Goodrich companies, 1912; vice president and general manager, Norwalk Tire & Rubber Co., Norwalk, Connecticut, 1925; vice president, The Continental Rubber Co., New York, N. Y., 1926; translator of several scientific works from the German; author of numerous scientific publications and patents on the chemistry of rubber; member, Am. Chem. Soc., German Chem. Soc., Soc. of Chem. Ind., Chemists Club, New York; Royal Societies, London, etc. Address, The Continental Rubber Co., 120 Broadway, New York, N. Y.

Charles Reid Boggs, *b.* Nashville, Tenn., Nov. 22, 1883. S.B. (M. I. T.) 1905. Asst. in electro-chemistry (M. I. T.) 1906; chief chemist, Simplex Wire & Cable Co., Boston, Mass., 1905; factory manager since 1917; presented a method of determining rubber by means of its tetrabromide at the Eighth Congress of Chemistry, New York, 1912; author of "Accelerated Life Test of Rubber Goods"; "Vulcanization of Rubber by Selenium"; inventor of U. S. patent No. 1,249,272 on vulcanizing rubber by selenium; member, Sigma Alpha Epsilon, Am. Chem. Soc., Amer. Inst. of Elec. Eng., Amer. Soc. for Testing Materials, Inst. of the Rubber Ind. Address, 201 Devonshire St., Boston, Mass.

Clayton W. Bedford, *b.* New Windsor, Ill., June 13, 1885. Student Univ. Illinois, 1903-4; B.S. in chemical engineering, Univ. Michigan, 1910; research chemist, Western Electric Co., New York; instructor organic chemistry, Case School App. Sci., Cleveland; research chemist, Goodyear Tire & Rubber Co., 1912-1922; research chemist, B. F. Goodrich Co., 1922-26; manager compounding department tire division, 1926 to date; co-author, H. A. Winklemann, "Systematic Survey of Rubber Chemistry," 1924; series of papers, in collaboration, "Reaction of Accelerators During Vulcanization," "Chemistry of Rubber Vulcanization Accelerators," "History of Organic Accelerators," with W. C. Geer; patentee of many inventions on accelerators of vulcanization; member, Amer. Chem. Soc., Mason. Address, 319 Vaniman st., Akron, O.

William C. Geer, *b.* Ogdensburg, N. Y., June 17, 1876. A.B. (Cornell) 1902; Ph.D. chemistry and physics, 1905; instructor chemistry, 1904-06 (Cornell); expert wood distillation, U. S. Forest Service, 1906-07; chief chemist, B. F. Goodrich Co., Akron, O., 1907; manager, development dept., 1912; director of goods and processes, 1916; vice president in charge of development and technical adviser; retired 1925 from executive work to engage in research; chairman Gas Defense Division W. S. Committee R. A. A.; adviser Chemical Warfare Service; author, "Reign of Rubber," 1922; inventor many processes in rubber manufacture; contributor of technical articles. Member board of directors, Old Trail School, Akron, O.; ex-president Akron Y. M. C. A.; fellow A.A.A.S.; R. S. A., Gt. Britain; member Am. Chem. Soc.: Am. Physi. Soc.; Am. Inst. Chem. Eng.; Soc. Auto. Eng.; Natl. Research Council; Inst. Rubber Ind., Gt. Britain; Sigma Xi. Address, 150 Valley road, New Rochelle, N. Y.

Arnold H. Smith, *b.* Akron, O., May 29, 1896. Student Akron Univ., 1913; B.S. chemical engineering, Armour Inst. Technology, 1917; rubber research chemist, Bureau Standards, Washington, D. C., 1917; research chemist Goodyear Tire & Rubber Co., Akron, O., 1919; chief chemist Thermoid Rubber Co., Trenton, N. J., 1921; chemist and technical sales Rubber Service Lab., Akron, O., 1922; assistant sales manager, 1926; joint author, "Determination of Free Carbon in Rubber Goods"; member, Am. Chem. Soc., secretary, Rubber Division, 1918 to date; Tau Beta Pi, Sigma Kappa Delta. Address: Rubber Service Laboratories, 611 Peoples Savings Trust Bldg., Akron, Ohio.

George Oenslager, *b.* Harrisburg, Pa., 1873. A.B. (Harvard), 1894; A.M. (Harvard), 1896; chemist, S. D. Warren & Co., Cumberland Mills, Me., 1896-1906; chemist, Diamond Rubber Co., Akron, Ohio, 1906-1912; research chemist, B. F. Goodrich Co., 1912-1920; technical adviser, Yokohama Rubber Co., Yokohama, Japan, 1920-1922; returned to B. F. Goodrich Co., as research chemist, 1922; invented the use of organic accelerators of vulcanization; member of Am. Chem. Soc. and Am. Inst. Chem. Eng. Address, B. F. Goodrich Co., Akron, Ohio.

Norman Arthur Shepard, *b.* New Haven, Conn., April 8, 1890. New Haven high school, 1907. Ph.B. (Sheffield Scientific School), 1910. Ph.D. (Graduate School Yale Univ.), 1913. Instructor, chemistry, Yale Univ., 1910; assistant professor, chemistry, 1917-1919; director organic chemical research, Firestone Tire & Rubber Co., 1919-1925; director, chemical research, 1925; published jointly researches on pyrimidines, hydantoins, amines, poisons in rubber industry, vulcanization and weathering of rubber, cord tire fabric. Member Am. Chem. Soc.; Sigma Xi. Clubs: Torch, Franklin, Akron Univ. Address, 150 Casterton avenue, Akron, Ohio.

C. Carroll Davis, *b.* Boston, Mass., Sept., 1888. B.A. (Dartmouth) 1911; S.B. (M. I. T.) 1914. Asst. chem. Boston Woven Hose & Rubber Co., Cambridge, Mass., 1914; chief inspector finished products; supervisor physical laboratories and plant; head production department, mill and calender room equipment; chf. chem. and asst. supt. technical department; co-author with J. M. Bierer of oxygen bomb aging test and a study of the economic use of reclaim as a substitute for new rubber; assistant editor on rubber and allied substances of *Chemical Abstracts* and special abstractor for the same journal of articles in all branches of chemistry in Italian; member Am. Chem. Soc. and Appalachian Club. Address, Boston Woven Hose & Rubber Co., Cambridge, Mass.

What the Rubber Chemists Are Doing

Separation of Coarse Particles from Powders

THE evident need of a dependable laboratory method for the determination of grit in rubber compounding ingredients to displace ordinary dry sieving tests is met by the apparatus devised by G. Gallie and D. B. Porritt, chemists of The Research Association of British Rubber & Tire Manufacturers.

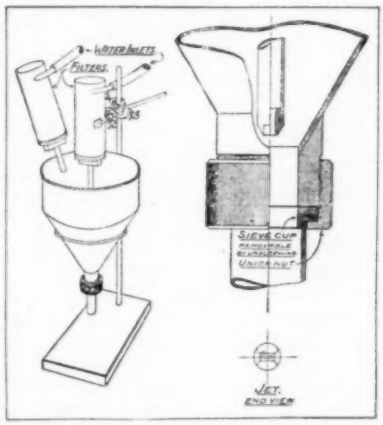
Their method condensed from *Transactions of the Institution of the Rubber Industry* is as follows:

Usual Tests for Grit

Two obvious methods have been used for the detection of gritty matter in powders. The first is to rub a small sample between the fingers, or better with oil between two glass plates, when the presence of large particles will be obvious in the dispersed film. This is merely a qualitative test. The more general practice is to sieve a known quantity of the dry powder through a fine mesh sieve and weigh the residue. This method presents several difficulties. First, the amount of coarse matter retained depends, not on the average size of the openings of the screen, but upon the dimensions of the largest opening. Wire gauze is far from a uniform material, and the larger the sieve used the greater the probability of the occurrence of a wearing defect, thus invalidating comparison of tests. Second, the sieve openings tend to become clogged with the powder, while aggregates of the latter which disintegrate in use are apt to be retained and estimated as grit.

To obviate these difficulties, it has been the custom to subject the powder to gentle rubbing during the process of sieving, and occasionally to carry out the operation under a stream of water to prevent the clogging of the mesh openings. It is evidently almost impossible to standardize the rubbing treatment, with the consequence that the result obtained largely depends upon the technique of the individual operator, while the mechanical treatment is liable to distort the openings of the sieve itself.

The apparatus here described is the outcome of an attempt to overcome these various difficulties and to provide an arrangement



Sieve for Testing Particle Size of Pigments and Compounding Ingredients

(1) free from personal errors; (2) involving the use of a small sieve susceptible of easy measurement; (3) to separate coarse from fine particles and break down loose aggregates of powder under easily reproducible conditions without damaging the sieve.

Gallie-Porritt Method

The method adopted consists in suspending the powder under test in water; supplying the mechanical force necessary to secure the passage of the fine particles through the sieve and breaking down any lumps by a jet of water under pressure. The details of the arrangement are shown in the accompanying illustration.

The apparatus consists of a metal funnel, terminating in a short cylindrical outlet, in which is inserted a shallow removable cup, on the bottom of which the wire gauze is mounted. This is 25 m.m. in diameter and of any desired mesh.

The water under pressure is applied by a tube fitted with a nozzle designed to discharge a spreading jet through the sieve. The tube is so arranged that the distance of the orifice in relation to the sieve can be adjusted. The tube is provided with a filter to ensure removal of any solid particles from the water. This filter must be made from gauze at least as fine as that used for the separation of the grit from the material under test, and must be sufficiently large to ensure a low velocity of flow to prevent undue loss of pressure. A similar arrangement is required for another tube used to supply a gentle stream of water for wetting the powder and keeping the volume of the liquid in the funnel constant during the progress of the test.

Details of Testing

A quantity of the material to be tested is weighed out and transferred to the funnel in which it is thoroughly wetted by a stream of water from the secondary supply. This treatment is continued until the funnel is about half filled with liquid. The high pressure jet is then slowly turned on full and the position of the nozzle under the liquid adjusted in relation to the sieve, until there is little or no disturbance on the surface and the level is, if anything, sinking. The secondary supply is now brought into use to maintain the level and to wash down solid matter adhering to the sides.

When the most perfect operating conditions have been attained the discharge pipe below the sieve is completely filled with water. It has been found that increasing the length of this column of liquid by adding a length of rubber pipe tends to improve the efficiency of the apparatus.

Samples of the issuing water are taken from time to time during the test. When they contain no suspended matter the rate of flow is reduced and any residual matter adhering to the sides of the funnel is washed into the lower portion of the apparatus and the jet then adjusted to a rate which just keeps the cylindrical portion full of violently agitated water. After thorough washing of the residue the jet is turned and the grit washed down into the cup. The latter is removed, its contents washed with distilled water, drained, dried at 90 to 100 degrees C. and weighed.

The apparatus enables tests to be made quickly and at the same time free from personal error, while the relatively small dimensions of the sieve make it possible to check the size of the openings either by microscopic examination or by projection on a screen for direct measurement.

Rubber Colors

Donald H. Powers[1]

The following is quoted from "The Contribution of the Dyestuff Industry in the Development of the Rubber Industry."[2]

One of the most recent developments in synthetic dyes is their application to rubber goods. The dyestuff industry, already supplying accelerators and antioxidants, turned its attention to the further applications of organic compounds and found that the high per-

[1] E. I. du Pont de Nemours & Co., Inc., Wilmington, Delaware.
[2] *Industrial & Engineering Chemistry*, December, 1926, 1344-1346.

centages of inorganic pigments previously used for coloring rubber goods could be replaced by small percentages of organic dyestuffs. Not only was it possible to obtain stocks correspondingly freer from inert filler but a far wider variety of shades and much brighter ones were available. With inorganic pigments the rubber industry was limited to relatively few shades and in many cases as high as 10 per cent was required. It is possible to replace this pigment by even less than 1 per cent of organic dyestuff and in some cases obtain a still brighter shade.

The selection of a dyestuff for rubber requires an entirely new set of criteria and relatively few successfully pass all of them. A few of the more important ones, especially those differing from the usual standards, will be mentioned.

ABILITY TO WITHSTAND VULCANIZATION. The first essential of a rubber color is that it must withstand hot or cold vulcanization. In hot vulcanization the color is heated well over 250 degrees F., in many cases by direct steam in a stock containing free sulphur and metallic oxides. Few will withstand this treatment and still hold their brilliancy and shade, more failing in this test than in any other. In cold vulcanization the color must withstand sulphur chloride fumes without loss of brilliancy. Few are the colors which will withstand both hot and cold vulcanization.

EFFECT ON CURE. Organic accelerators are in many cases basic substances and the presence of acidic colors may markedly retard their action. Further, it is preferable that the organic color should have no accelerating effect as special adjustments would be necessary in the amounts of accelerator used for every variation in the per cent of color.

DISPERSION. The organic colors, unless they are soluble in the rubber hydrocarbon, must be in a very fine state of division, as complete dispersion is absolutely necessary. Certain colors are excluded entirely because of a tendency to agglomerate and to give a spotted instead of a uniform stock. Many dyestuffs which are not fast when added directly to the rubber become so if they are first mixed with some inorganic filler such as China clay and then added to the rubber.

NON-MIGRATION AND NON-BLOOMING. Sulphur, when used in relatively high percentages, has a tendency to bloom, so that fine crystals cover the surface giving a black stock a gray appearance. In the case of colors this blooming is much more objectionable, as this surface color rubs off and stains whatever comes in contact with it.

The color must not migrate from a colored part of the rubber to a non-colored part. This migration appears to be a function of the solubility of the color in rubber and an insoluble organic color is usually found to be non-migrating.

BLEEDING. Rubber colors must be absolutely non-bleeding, and a color which may not be fast to washing in textiles does not necessarily bleed when used in a rubber stock. As the inorganic pigments do not bleed, it is essential that the organic colors which may be used to replace them should be non-bleeding.

FASTNESS TO SUNLIGHT. While a great many colored rubber goods are rarely exposed to the sunlight, others are exposed to it for long periods of time and must not fade. As the rubber colors in many cases are textile colors, their light fastness has already been determined and it is possible to select colors which will withstand sunlight.

BRILLIANCY. This is one of the most important factors in selecting a color for rubber. In a great many cases where hot vulcanization does not absolutely destroy the shade, nevertheless the heating with sulphur deadens it. In practically all stocks containing organic colors the shade of the goods is distinctly different after curing. It has been found possible, however, to obtain colors of practically every shade which do hold their brilliancy, and the bright varicolored bathing caps, shoes, and wraps we see along the beaches are testimony of this fact.

COST. Another factor which must be considered is cost, but the high tinctorial power of the organic dyes and relatively high cost of the high-grade inorganic pigments make this factor less important than it would at first appear.

In selecting a color for rubber all these numerous requirements must be considered, and relatively few dyes pass them all. Many of the organic colors are lakes, but valuable colors have been found in almost every class of dyestuff. While the use of organic colors has been primarily for the bright colored goods, their use in the replacement of inorganic pigments is growing apace.

A New Hypothesis of Rubber Structure Based on Most Recent X-Ray Researches[1]

Ernst A. Hauser

About a year and a half ago Katz found that rubber when stretched shows an x-ray spectrogram similar to those of ordinary well-defined crystals. As he could not trace any sign of x-ray interferences in the unstretched material, he believed that rubber must be considered as a "pseudo-amorphous crystalline" substance.

Hauser and Mark have since carried out a systematic study on the appearance and disappearance of x-ray interferences in rubber which has been treated in different ways, and trial results have recently been published in detail.[2]

A brief summary of the work accomplished up to now shows the following:

1. The position of the x-ray interferences is constant from the moment they appear at about 80 per cent elongation up to the elongation at break.

2. The intensity, determined by the use of a Seeman spectrograph, increases proportionally to the elongation.

3. The position of the amorphous ring is independent of the degree of elongation.

4. Its intensity decreases in proportion to the elongation.

5. The "Halbwertbreite" is constant throughout.

6. By heating or swelling stretched rubber or by releasing the internal strain through storage when stretched the interferences disappear.

7. If stretched rubber is cooled and then released the interferences remain unchanged.

8. Cooled rubber stretched shows the normal interferences with weak intensity.

9. The interference can be produced by pressing rubber through a nozzle, whereas rubber compressed uniformly in a piezometer shows no signs of interference.

10. Rubber under torsion or rubber stretched circularly or in two diagonal directions shows the diagram which would be expected from an ordinary crystal treated similarly.

11. All x-ray interferences agree to a rectangular-rhombic crystal with a basis cell of $(C_5H_8)_8$ [E. Ott (Zurich) recently figured the molecular unit consisting of $(C_5H_8)_6$]. The number of combined molecules needed to produce the interferences is about 2,000.

These data correspond so closely with the writer's views on the theories of crystal structure that there seems to be no doubt that we have to deal in rubber with a phenomenon of partial crystallization. It is not necessary to call the groups or aggregates of molecules to which the appearance of the interference is due, crystals, but as they must be definitely orientated one might just as well stick to the expression "crystal." That we have to deal with a preformed definite orientation of the molecule, therefore excluding all theories of alinement during stress, is definitely proved by the fact that the location of the interferences remains constant. The increase in intensity might be due to the growth of a single crystal or to the appearance of new individuals.

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[1] Presented under the title "The Structure of Rubber" before the Division of Rubber Chemistry at the 72nd meeting of the American Chemical Society, Philadelphia, Pa., September 5 to 11, 1926.—*Industrial & Engineering Chemistry*.

[2] *Kolloidchem. Beihefte*, 22, 63 (1926), and *Ambronn Festschrift*, 64 (1926); *Gummi-Ztg.*, 40, 2,090 (1926); *Kautschuk*, p. 10 (1925).

The chief point remaining to be discussed is the question—are the crystals formed during the actual stressing, or are they already preformed in the unstretched material? It is difficult to understand how crystallization or discrystallization can be reverted so easily and completely. Furthermore, we have definite proof that the appearance of the x-ray interferences is instantaneous, which also leads to the conclusion that we have to deal with preformed aggregates of definite size.

Why do they not show up in rubber as long as it is not put under certain strain? The writer believes that in rubber we have to deal with preformed aggregates of definite size. These "crystals," consisting of the highly polymerized rubber hydrocarbon, are in a swollen condition, the lower polymerized hydrocarbon acting as swelling agent. In this state the swinging amplitude of the molecules is too great for the formation of clear interferences. When stressing, the liquid phase is expelled, allowing the appearance of clear interferences. When released the substance tends to regain its former state of equilibrium, which, of course, leads to the disappearance of the interferences.

This theory explains the elastic properties of rubber on the assumption of an equilibrium between a higher and at least one lower polymerized hydrocarbon of the same chemical constitution.

The theory put forward enables us to explain most of the problems connected with rubber industry. Detailed discussion of the various problems may be found in the work of Hauser and Mark previously mentioned.[2] The purpose of this paper is merely to show that systematic x-ray research has enabled us to view rubber structure much closer than before and to give an explanation which in all respects is in full accordance with the experimental facts.

Chemical Patents

United States

1,610,226. PROCESS FOR THE MANUFACTURE OF DRY, WELL PRESERVED RUBBER FROM LATEX. A moderately heated colloidal suspension of lamphlack in an alkaline solution of a fatty acid is mixed with latex. The mixture is agitated and maintained at sufficient temperature to eliminate any volatile anti-coagulants and subsequently coagulating the mixture.—Edouard S. A. Cohen, The Hague, Netherlands.

1,610,864. CEMENT, CONCRETE AND PLASTER. A hydraulic cement containing combined water and finely and uniformly distributed rubber. The product is hard, strong, waterproof and capable of taking a polish.—Victor Lefebure, London, England.

1,611,278. RUBBER LATEX COAGULUM. One part by weight of specified ingredients is effectively dispersed in about 5 parts of a liquid medium. This dispersion is mixed with rubber latex and agitated until a coagulum is formed.—August H. Petersen, assignor to Kelly-Springfield Tire Co., both of Cumberland, Maryland.

1,611,349. PROCESS OF MIXING SUBSTANCES WITH RUBBER LATEX. A compounding ingredient is mixed with latex during coagulation until the coagulated latex is able to retain the ingredient approximately universally dispersed. The moisture is evaporated from the latex during mixing. The compounded rubber so obtained is vulcanized.—Ernest Hopkinson, New York, N. Y., assignor to The Naugatuck Chemical Co., New Haven, Connecticut.

1,611,436. SOFTENING RUBBER. A material conforming to specified tests is added to the rubber.—Charles P. Hall, Akron, Ohio.

1,612,327. TYPE CLEANING COMPOSITION. A plastic mass containing a mixture of clay, glycerine, colophony, petroleum, Pará rubber, talc and resin.—Ernest Thalmann, Winterthur, Switzerland.

1,612,780. PURIFYING RUBBER. Latex is atomized to form dry rubber in an uncompact plastic form, in which it is subjected to treatments adapted to remove its non-rubber constituents.—James H. Reel, assignor to General Rubber Co., both in New York, N. Y.

1,613,572. VULCANIZATION OF CAOUTCHOUC. Vulcanization by an accelerator.—Clayton W. Bedford, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,613,573. VULCANIZATION OF CAOUTCHOUC. Acceleration of vulcanization by treating it successively with a number of substances which combine to form a dithiocarbamic compound.—Clayton W. Bedford, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,613,574. VULCANIZATION OF CAOUTCHOUC. A rubber mix containing the zinc salt of an oxygen-free organic acid is treated with ammonia or an amine to produce in the mix the ammonia or amine addition product of the zinc salt of the acid. The product is then vulcanized.—Clayton W. Bedford, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y., and The Goodyear Tire & Rubber Co., Akron, Ohio.

1,613,620. TYPE CLEANING COMPOSITION. A plastic non-erasing cleaning composition consisting of a mixture of rubber, a water insoluble soap, mineral oil, a mineral filler and rosin oil.—Roy E. Neidig, Moscow, Idaho.

1,614,019. SPONGE RUBBER. A method and product by which an uncoagulated aqueous paste comprising dispersed rubber globules and vulcanizing agents are cured in a mold to form sponge rubber.—William B. Pratt, Wellesley, assignor to Research, Inc., Boston, both in Massachusetts.

Dominion of Canada

267,044. PUNCTURE CLOSING COMPOSITION. This comprises 1 pound pulverized asbestos, 1 ounce of pulverized slippery elm bark and 3 pints of water.—Thomas E. Law, Mesa, Arizona.

267,116. RUBBER DERIVATIVE. The method of producing a composition of matter which comprises incorporating into rubber a halide of iron in which the halide has an atomic weight of 35.46 or greater. Then applying heat to the mix sufficiently to cause a pronounced exothermal temperature to rise in the mix.—The B. F. Goodrich Co., assignee of Webster N. Jones and Herbert A. Winkelmann, both of Akron, Ohio.

267,121. CORK-RUBBER COMPOSITION. A composition of granulated cork and latex is made by mixing the cork with the latex without coagulation and subjecting the mixture to pressure while coagulation of the latex proceeds.—The Alfred Hale Rubber Co., Atlantic, assignee of David A. Cutler, Willaston, both in Massachusetts.

267,166. LATEX PREPARATION. Casein, previously treated with a lime solution, is added to the latex, which is then coagulated with an acid.—United Products Corporation of America, Philadelphia, Pennsylvania, assignee of Arthur Biddle, Trenton, New Jersey.

United Kingdom

259,679. ABRADING MATERIALS. A thermoplastic substance such as rubber, shellac or resin, dissolved in a solvent, is mixed with the abrasive and the solvent evaporated before compression or vulcanization in a mold.—P. M. Salerni, 20 Sydenham Hill, Upper Sydenham, London.

259,933.† ACCELERATORS. Condensation products of aldehydes and nitrogen compounds.—Naugatuck Chemical Co., Naugatuck, Connecticut, assignee of S. M. Cadwell, Leonia, New Jersey, and A. T. Maximoff, New York, N. Y.

260,001.† PRESERVING RUBBER. Aging of rubber is prevented by adding to it the evaporation residue of latex serum from which ineffective ingredients may have been removed. The residue is added to the rubber in the proportion in which it naturally occurs in the latex, that is about 5 per cent on the rubber.—Soc. Italiana Pirelli, Milan, Italy.

260,374. PARCHMENT PAPER AND VULCANIZED FIBER. Rubber latex or a drying oil, such as tung oil, may be applied to the cellulose material before hydrolysis.—R. Arnot, 76 Pomeroy street, New Cross, London.

260,592.† INSULATOR PRODUCT. Porcelain parts are cemented together by a vulcanizing mix of rubber, accelerators and only as much sulphur as is necessary for vulcanizing.—Studien-Ges. für Wirtschaft und Industrie, 11 Koniginstrasse, Munich, Germany.

260,593.† INSULATOR MAKING PROCESS. Cementing porcelain parts with rubber, accelerators and sulphur mixing.—Studien-Ges. für Wirtschaft und Industrie, 11 Koniginstrasse, Munich, Germany.

260,620.† DEVULCANIZING RUBBER. Following is an example of the regeneration of vulcanized rubber: 220 pounds of rubber scrap is ground and placed in a rotatable drum capable of being heated and cooled externally, with 66 pounds of caustic soda at 35 degrees Be. The drum is rotated and heated rapidly to 135 degrees C. and then slowly to 210 degrees C., the whole process taking 7 hours. Fabric may be destroyed by a preliminary acid treatment.—Soc. Italiana Pirelli, Milan, Italy.

260,637.† UTILIZING RUBBER WASTE. Example of process; 100 parts of ground rubber scrap, 10-20 parts crude rubber, 10-20 parts rosin, and 20 parts para-toluene sulphonyl chloride are mixed and heated to 140 degrees C. for 8 hours. The products soften at 60-105 C. and have a high mechanical strength and low dielectric constant. Alkali reclaimed rubber is less actively reacted upon than acid reclaim.—The B. F. Goodrich Co., New York, N. Y., assignees of H. Gray, 281 Volga Way, Akron, Ohio.

260,652. RUBBER PROOFING SOLUTION. Leather paper or fabrics are impregnated with rubber by means of a solution containing 30 pounds of rubber, 30 gallons of benzine, 40 gallons of naphtha, 50 gallons of carbon tetrachloride, and 20 ounces of acetone with or without 20 ounces of isoprene.—N. J. S. Nunn, 171 Winsover Road, Spalding, Lincolnshire, and K. P. Padshaw, 6B Linden Gardens, Bayswater, London.

† Not yet accepted.

New Zealand

57,149. ELASTIC THREAD. A mix composed of 50 pounds of first latex crêpe, 14 ounces of sulphur, 1 pound of zinc oxide, 4 ounces of zinc diethyl-dithio-carbamate, and vulcanized in boiling water.—The Dunlop Rubber Co., Ltd., 1, Albany street, Regents' Park, London, and John Healey, St. Mary's Mills, Leicester, both in England.

CHICLE EXPORTS FROM GUATEMALA

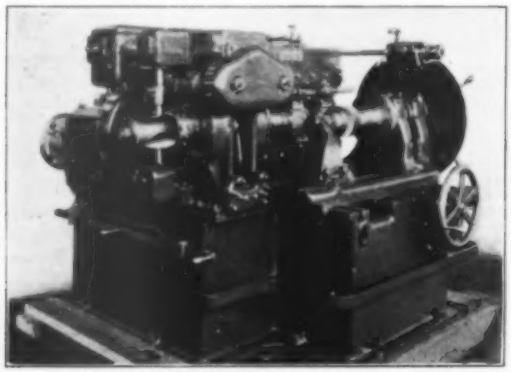
During the last few years the foreign trade of Guatemala has shown a steady increase, according to *Commerce Reports*, while approximately 64 per cent of the country's exports are absorbed by the United States. Chicle represents one of Guatemala's important products, this being found abundantly in the Department of Petén, from which shipments having a value of more than $500,000 are exported annually. The amount of chicle exported in 1924 totaled 903,655 pounds, value $289,170, the figures rising for 1925 to 1,840,182 pounds, value $588,858.

SHIPMENTS OF VARIOUS PRODUCTS FROM BRITISH GUIANA HAVE shown a considerable increase during 1926 as compared with the year previous, according to *Commerce Reports*. Exports of balata during the first half of 1926 were 100,000 pounds greater than for the first six months of 1925, while the heavy rains and the consequent rise of the streams made easier the transportation of balata.

New Machines and Appliances

Improved Gear Machine

THE machine here pictured represents a new design of gear generator embodying the most modern machine tool features, planned to produce gears accurately and rapidly. It is equipped with a large assortment of accessory tools and in addition, straight guides for the cutters to be used instead of the helical guides when



Farrel Improved Gear Generator

it is required to produce straight tooth gears. The machine is exceptionally adaptable, and will cut straight tooth gears, helical gears, staggered tooth double helical gears, and continuous tooth Sykes gears.—Farrel Foundry & Machine Co., Ansonia, Connecticut.

Hard Rubber Disk Grinder

The machine here illustrated was designed for numerous flat surface operations of large area, where the problem is to produce a flat surface without any accurate relation to any other portion of

Gardner Disk Grinder with Vertical Motor

the object, such for example as grinding hard rubber panels. The deep corrugated disk is unequalled for fast cool cutting effect.

The machine is so designed that either wet or dry grinding can be done. The direct connected vertical motor arrangement provides a compact, self-contained tool occupying a minimum of floor space and by eliminating all belts, pulleys, and gearing, gives a quiet smooth running power saving drive.

The steel disk wheel is 72 inches in diameter and reinforced. The motor frame serves as the machine pedestal and through it air for cooling is circulated, drawn upward by fan blades on the underside of the disk wheel. The upper or body portion of the machine forms a water reservoir of 75 gallons capacity for wet grinding.—Gardner Machine Co., Beloit, Wisconsin.

Rubbing Machine

The electrically driven rubbing machine here pictured is made in forms to polish plane, convex and concave surfaces of materials of all kinds. In rubber factories it will be found useful for polishing press platens, large mold areas, tire cores, rolls, cured floor tiling, hard rubber surfaces, etc.

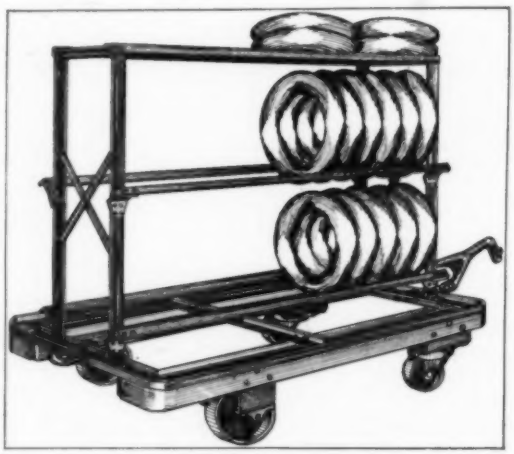
Thompson Rubbing Machine

It is equipped with electric motor for any electrical specification to operate from a lighting circuit. The power is transmitted from the motor through a flexible shaft to the head. The latter weighs about 7 pounds and is easily handled and controlled with one hand. The head has a reciprocal motion giving 1,500 complete rubs per minute with two pads. The latter are removable and cover an area of 22½ square inches. They are so designed that they will receive all types of sand paper, abrasive cloth, felt and other rubbing materials. The tool is suited for either wet or dry grinding.—Thompson Rubbing Machine, Inc., Binghamton, New York.

Steel Tire Truck

For truck transportation of tires in factory and warehouse the all steel tire truck here pictured has been designed. It is strongly built of steel channels from 12 to 14 feet long and is mounted on central wheels fitted with Hyatt roller bearings. Near each end are ball-bearing swivel casters.

This truck provides a very efficient means for handling loads of



Economic Tire Truck

112 to 140 tires at a time. It is built in either wood or all steel and in any case is very durable.—Economic Steel Rack Co., Bowdoin street, Everett, Massachusetts.

Nibbling Machine

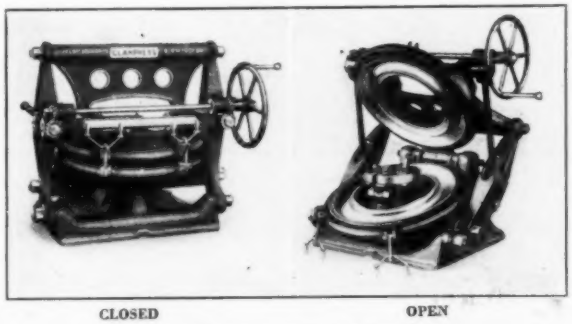
The machine shown in the illustration is the latest development of the "Nibbler" machine. It carries a vertical acting tool which is readily guided against the edge of a plate of metal and rapidly nibbles or cuts the stock away in any desired shape or figure with great rapidity. Every conceivable external or internal form up to ⅜-inch in thickness can be produced by a nibbler at a speed greatly exceeding that by drilling in any sheet metal, bakelite, celluloid or other composition.

Campbell Nibbler

The No. 0 machine pictured operates at 950 strokes per minute and has a cutting speed of 60 inches per minute and will cut 14 gage material. In the rubber factory it will be found useful for cutting out plates for heel and other three-part molds, and in producing sheet metal gages, shoe part patterns and templates for all purposes where accuracy and economy are important.—Andrew C. Campbell, Inc., Bridgeport, Connecticut.

Clampress Tire Vulcanizer

Vulcanization of tires on airbags is generally accepted practice, as also is the use of watch-case molds. The use of individual curing units not only increases the output per mold, but permits labor costs of molding to be reduced about 50 per cent. This saving is largely due to the fact that mold handling is reduced to a minimum, and the only items that require transference from point to point are the raw and finished tires with their airbags and curing rings. Individual vulcanizers have so far been of either vertical or horizontal type. The choice of current practice, however, favors the latter because it obviates any irregularities in cure due to the presence of water in the airbag, which in the vertical type causes local undercured spots in the cured tire.



CLOSED OPEN

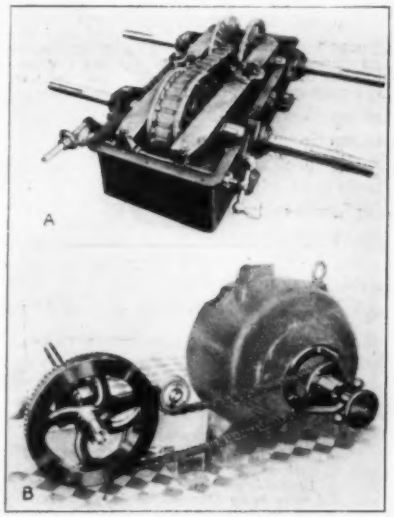
Macbeth Clampress Tire Curing Unit

The latest development in individual curing units is here pictured in open and closed position. It is the invention of Colin Macbeth, well known British tire engineer. The apparatus rests on the floor without bolting down. The two steam curing sections rest in an inclined position upon the base. They are journaled in the back bearing by means of a hollow trunnion pin, through which the steam enters. The upper steam section is provided with toggle link bearings and the bottom one has a cross shaft secured to it. The press is closed and opened by two side links and the toggle link operated by a hand wheel, spiral gearing and jack screws. This combination insures that the press is positively held at all positions. The tire is supported upon a platen to which are attached automatically controlled hooks for separating the tire from the mold. There is also a constantly reducing device that is used for quickly opening the press after separation of the mold.

This new type of curing unit is made in all sizes ranging from motor cycle tires to giant pneumatic tires. It occupies but little more floor space than an ordinary tire mold. The press requires nothing more for its operation than the necessary steam supply, exhaust trap and an air connection. The arrangement of the steam passages gives a perfectly even cure in the briefest time and with the least possible attention of the operator.—Rogers Wilson & Co., Speaking Stile Walk, Birmingham, England.

Positive Variable Transmission Gear

A great advance in the field of mechanical transmission of power and one that solves a very old engineering problem is embodied in the English invention here illustrated. It enables, for example, an A. C. motor to be used direct for variable speed shaft driving without a transformer and a D. C. motor. The device is known as the "P. I. V." (positive, infinitely variable) gear. It allows an infinite number of speed variations being transmitted positively to a driven from a driving shaft at any centers. It is controlled by a single handle.



(A) **"P. I. V." Gear in Box** *(B)* **"P. I. V." Gear, Open Chain Drive**

A device of this sort is useful in innumerable situations as for example in electrical driving in rubber factories for spreaders, wrapping machines, rollers, conveyers and elevators.

The design consists essentially in the ordinary standard gear, which may be contained in a small enclosed gear box, illustration *A*, or operated in the open at long centers, illustration *B*, of a pair of expanding pulleys of the opposed conical disk types, one set on each shaft, between which runs a chain of entirely new construction, engaging positively with the pulleys at its edges. The inner sloping surfaces of the pulleys have alternate ribs and grooves so that the chain rises or sinks in the latter as the movement along the shaft takes place according to the control handle, giving a different effective driving diameter and allowing infinite variation in the speed ratio, with positive transmission. In the "P. I. V." chain each link has a longitudinal slat punched through, containing a sleeve filled tightly with upright thin steel plates or slats which are free to move transversely and are engaged by the ribs, which play the part of teeth.

Illustration *B* shows a typical example of the open chain electric drive at long centers. The A. C. motor runs at 1,000 revolutions per minute while the speed of the driven shaft can be varied at will within the range of 250 to 500 revolutions per minute, by

operating a wheel control at the end of the motor shaft. The arrangement may be modified in many ways as regards speed ratios. The general principle consists in having on the motor shaft, or on the driven shaft if necessary, the "P. I. V." special driving pulleys of the opposed conical disk type with radiating ribs as indicated, including a jockey pulley for the chain. In this way an accurate control of speed variation is obtained from A. C. motors.—P. I. V. Gear Syndicate Ltd., 7 Princes street, Westminster, S. W. 1, London, England.

New Seatless Blow-Off Valve

The seatless blow-off valve here pictured differs from others of the same manufacturer by having the lower packing set deeper in the body below the inlet and a correspondingly longer plunger. Thus at no time during the cycle of operation is the packing exposed to the flow. This valve is made of electric furnace steel with bronze, nickel alloy, or monel metal trimmings in both angle and straightway types with flanges to suit different pressures. It conforms to A. S. T. M. specifications. In the illustration two type C valves are shown, an angle type with operating handle and planetary gear operation in tandem with a direct acting straightway form.—Yarnall-Waring Co., Chestnut Hill, Philadelphia, Pennsylvania.

Yarway Type C Valve

Machinery Patents

United States

1,610,910. COMPOSITE SHEATH FORMING AND CURING COMBINATION. The apparatus train consists of an extruding machine, a sewing head, impregnating device, and vulcanizing compartment. The stranded wire to be sheathed is drawn (1) through the die of an extruding machine where it is rubber covered, (2) through a sewing head where it is sheathed with textile strands, (3) through a heated bath of paraffin, and (4) through a vulcanizer heated to curing temperature.—Robert R. Williams, Roselle, New Jersey, assignor to Western Electric Co., New York, N. Y.

1,611,162. VULCANIZING APPARATUS. By this apparatus loading and unloading of molds, and the warming and cooling operations are carried on continuously without interruption. The vulcanizer is a horizontal cylinder and divided by gate valves into three sections. The middle or curing section is twice the length of each end section. A track runs through these chambers for the passage of trucks carrying tire molds. Preliminary heating is done in one end section and after curing, cooling, in the opposite end section. The mold cars pass in at one end and out at the other at regulated intervals of time to allow curing to take place.—John L. G. Dykes, Chicago, Illinois.

1,611,218. CALENDER INLAID SHEETS. A pair of three-roll calenders are arranged to deliver from their bottom rolls sheets of rubber composition having depressions made by a deeply engraved or profiling roll. The designs in one of these sheets are made to register so that when brought together by passage through a pair of rolls between the calenders, the design patterns mutually interlay with each other. The composite inlayed sheet thus formed is designed to be slit by a band knife to make two sheets.—Tod J. Mell, Akron, Ohio.

1,612,390. CUTTING TABLE. The feature of this table is the arrangement of the two slotted cutting guides. These lie upon the table and their ends are connected by a set of rods forming a moveable frame with the cutting guides as the cross table members. The guides are adjustable to regulate the length of stock to be cut which is uniform, however, the guide frame may be shifted to correspond to the position in which the stock is laid. The cutting operation is very rapid, as the knife is guided during its whole stroke and requires little of the operator's attention.—Charles E. Maynard, Northampton, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,612,535. MACHINE FOR REINFORCING BEADS. The purpose is to quickly and accurately position separate flipper strips upon the inner, and outer peripheries of a clincher bead. The edges of the strip overlap forcing one strip into the concave side face of the bead. The overlapped portions of the strips are pressed together to form the flipper strip proper.—Edward D. Putt, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,612,545. TUBE MAKING MACHINE. It is designed for making endless fan belts made up of fabric rolled in tube form on a mandrel. It embodies in a single three-roll tube making machine means for loosening the tube on the mandrel and means for applying and removing the fabric wrapper. The wrapped tubes are cured on the mandrel and loosened by rerolling them under pressure between the rolls of the machine. This operation stretches the tube wall and frees it from the mandrel so that it can be removed easily for cutting into rings for individual fan belts.—Horace D. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

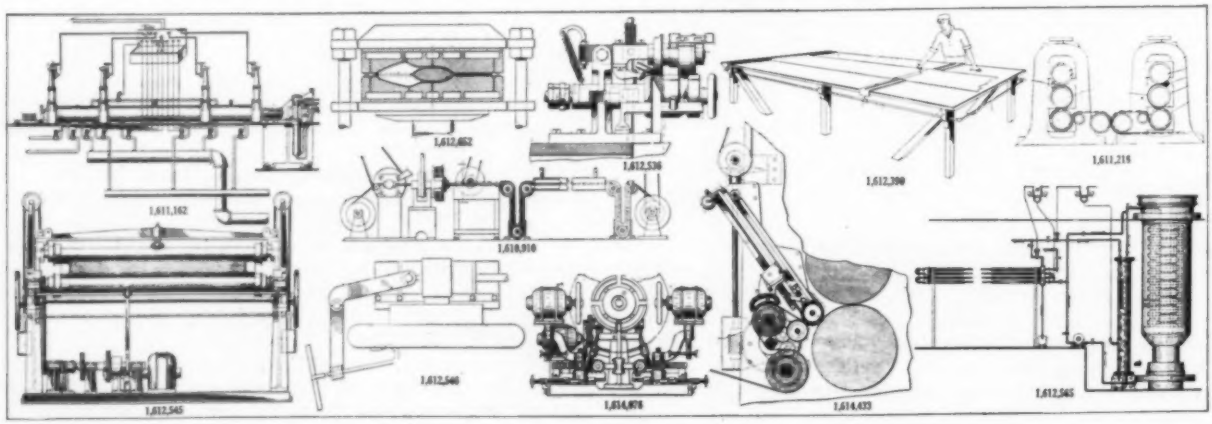
1,612,546. TIRE STRIPPING DEVICE. This is an attachment for a tire building machine. It is arranged to swing across the circumference of the core and carries a hook which can be inserted between the bead of the tire and the core to break their adhesion.—William C. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,612,565. APPARATUS FOR HEATING A LIQUID. This is designed for heating water for use in a tire vulcanizing apparatus in which the tires are subjected to external and internal heat and pressure. It comprises a steam preheater supplying an afterheater. The temperature of the water is controlled and maintained at a constant temperature until its introduction into the tires through a circulating pump.—Roy W. Brown, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,612,652. MOLD FOR RUBBER SANDALS. This mold provides a method of making sandals from sheet rubber stock by pneumatically seating the stock in dies by which the articles are united and cut from the surplus stock. A mandrel is placed in the mold to form the loop of the heel strap of the sandal.—Fred T. Roberts, Yonkers, assignor to Paramount Rubber Consolidated, Inc., Tuckahoe, both in New York.

1,614,076. GRINDING MACHINE. This automatic machine for resurfacing airbags by grinding comprises duplicate grinding units simultaneously active on opposite sides of the plane of rotation of the airbag under treatment. The mechanism and airbag core are so correlated that the operator needs only to mount the airbag, set the grinders to the starting point and turn power on the machine.—Robert McClenathen, Frostburg, assignor to Kelly-Springfield Tire Co., Cumberland, both in Maryland.

1,614,433. TENSION APPARATUS FOR CALENDERS. This provides means for operation in conjunction with the rolls of a calender to exert a uniform tension upon the cords of cord fabric and to maintain this tension when the final portion of the fabric is being fed through the rolls of the calender. The device comprises a tensioning unit of three rolls set opposite the bottom roll of the calender. One of these tensioning fabric rolls contacts with the roll of an auxiliary tensioning device before entering the calender. The driving mechanism simultaneously moves the tensioning and auxiliary tensioning units into their operating positions and vice versa. A control system is provided to stop automatically the tensioning units at the limit of their movement.—Carmon A. Myers, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.



1,610,873 Method and machine for forming tabs and applying them to articles. Frank J. MacDonald, Ellet, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,610,954 Method of making composite articles. Leslie Fawcett Lamplough, Chicago, Illinois, assignor to Western Electric Co., Inc., New York, N. Y.

1,611,092 Machine for inserting washers in heels. Leo S. Whitehead, Akron, Ohio.

1,611,355 Tire building machine attachment. Hector V. Lough, assignor to The Hartford Rubber Works Co., both of Hartford, Connecticut.

1,611,473 Method of tempering leather, rubber and composition soles and the like. Giles W. O. Martin, West Medford, assignor to American Shoe Machinery Co., East Boston, both in Massachusetts.

1,611,645 Apparatus for producing compound rubber sheets. Arthur S. Knowlton, assignor to The Miller Rubber Co., both of Akron, Ohio.

1,611,781 Belt cutting machine. Myron A. Russell, James P. Farrell and Lawrence A. Meyer, assignors to The Rubber Development Co., all of Dayton, Ohio.

1,611,829 Driving belt. Abraham L. Freedlander, assignor by direct and mesne assignments of three-fourths to The Dayton Rubber Manufacturing Co., and one-fourth to General Motors Research Corporation, all of Dayton, Ohio.

1,611,830 Driving belt. Abraham L. Freedlander, assignor by direct and mesne assignments of three-fourths to The Dayton Rubber Manufacturing Co., and one-fourth to General Motors Research Corporation, all of Dayton, Ohio.

1,611,884 Tire casing vulcanizer. Carleton W. Campbell, assignor to Mol Manufacturing Co., both of Denver, Colorado.

1,612,229 Tire spreader. Arthur V. Snodgrass, Little River, Kansas.

1,612,282 Belt cutting machine. William G. Goodwin and Abraham L. Freedlander, assignors by mesne assignments to The Dayton Rubber Manufacturing Co., all of Dayton, Ohio.

1,612,566 Mold. William K. Brown, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,612,613 Apparatus for supplying materials in any desired ratio of weights. Joseph George Coffin, Hempstead, assignor to General Rubber Co., New York, both in New York.

1,612,614 Method of making baby pants. Arthur E. Collins, Cuyahoga Falls, assignor to The Miller Rubber Co., Akron, both in Ohio.

1,612,651 Method of making hollow rubber articles having whistles. Fred Thomas Roberts, Yonkers, assignor to Paramount Rubber Consolidated, Inc., Tuckahoe, both in New York.

1,612,724 Method of producing multicolored grain effect in sheet rubber. Jacob C. Housekeeper, assignor to The Inland Manufacturing Co., both of Dayton, Ohio.

1,612,731 Tire building core wheel. James E. Kelley and Pearl J. Williams, Springfield, Ohio.

1,612,786 Collapsible tire core. William C. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,612,787 Collapsible core. William C. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,612,971 Selective punching machine. Walter S. Freeburg, Milwaukee, Wisconsin, assignor by mesne assignments, to The Fisk Rubber Co., Chicopee Falls, Massachusetts.

1,613,519 Tire making machine. Colin Macbeth, Erdington, Birmingham, assignor to The Dunlop Rubber Co., Ltd., Regent's Park, London, both in England.

1,613,697 Machine for manufacturing hollow cushion tires. George F. Fisher, Roselle, New Jersey, assignor to Morgan & Wright, a corporation of Michigan.

1,613,983 Ruching, forming and applying machine. Arthur Collins, assignor to The Miller Rubber Co., both of Akron, Ohio.

1,613,993 Machine for making articles from plastic materials. Richard T. Griffiths, assignor to The Miller Rubber Co., both of Akron, Ohio.

Dominion of Canada

266,506 Vulcanizing apparatus. The Edward G. Budd Manufacturing Co., assignee of Joseph Ledwinka, both of Philadelphia, Pennsylvania, U. S. A.

266,534 Tire building tool. The Goodyear Tire & Rubber Co., assignee of Dayton L. Williams, both of Akron, Ohio, U. S. A.

266,535 Grinding mill. The Goodyear Tire & Rubber Co., assignee of Will C. State, both of Akron, Ohio, U. S. A.

267,013 Tire making machine. Hermann Deber, Munich, Bavaria, Germany.

267,119 Sheet fabric cutter. The Goodyear Tire & Rubber Co., assignee of William H. Gerstenslager, both of Akron, Ohio, U. S. A.

267,120 Band building machine. The Goodyear Tire & Rubber Co., assignee of Alov F. Maas, both of Akron, Ohio, U. S. A.

267,311 Machine for placing washers on heel molds. The Dryden Rubber Co., Chicago, Illinois, assignee of Julius H. Kintzele, St. Louis, Missouri, both in U. S. A.

United Kingdom

259,649 Mixer and grinder for rubber solutions. A. Fraser and Rissik, Fraser & Co., Ltd., Factory Lane, Croydon, Surrey, and F. Shaw & Co., Ltd., Corbett Street Ironworks, Bradford, Manchester.

259,680 Thermostat. P. M. Salerni, 20, Sydenham Hill, Upper Sydenham, London.

259,685 Apparatus for tapering rubber tubes. Dunlop Rubber Co., Ltd., 1, Albany street, Regent's Park, London, and J. Dalglish, Dunlop Rubber Co., Ltd., Fort Dunlop, Erdington, Birmingham.

†Not yet accepted.

259,981† Tire vulcanizer. Soc. Italiana Pirelli, Milan, Italy, assignee of G. Venosta.

260,282† Pneumatic tire mold. Morgan & Wright, assignee of A. O. Abbott, both of Belleview avenue, Detroit, Michigan, U. S. A.

260,299† Tire vulcanizer. Soc. Des Procédés Fit, 26 St. Jacques, Grenoble, Isère, France.

260,310 Belt conveyer. Dunlop Rubber Co., Ltd., 1, Albany street, Regent's Park, London, H. C. Young and H. O. Burr, Dunlop Rubber Co., Fort Dunlop, Erdington, Birmingham.

Germany

438,689 Kneading and mixing machine for rubber and similar materials. The Dunlop Rubber Co., Ltd., London. Represented by Dr. R. Wirth, C. Weihe, Dr. H. Weil, M. M. Wirth, Frankfurt-am-Main, and T. R. Kcehnhorn and E. Noll, Berlin S. W. 11.

438,690 Spreading machine provided with apparatus for recovering solvent, for manufacturing bands or the like. Albert Boecler, Malinö, Sweden. Represented by R. Specht, Hamburg.

438,691 Apparatus for producing thin-walled hollow rubber bodies. Firma Kolnische Gummifaden-Fabrik vorm. Ferd. Kohlstadt & Co., Köln-Deutz.

Designs

Germany

970,911 Vulcanizing apparatus for tires and tubes. Robert Meyer, Auf dem Dorn 21, and Karl Stolle, Derfflingerstrasse 13, Hannover.

972,536 Apparatus for vulcanizing damaged parts in automobile tires. Gustav Curth, Mariannenstrasse 103, Leipzig-Volkmarsdorf.

Process Patents

United States

1,612,724. PRODUCING MULTICOLORED GRAIN EFFECTS IN RUBBER. An ordinary three-roll calender is used for sheeting a brown rubber mixing and at intervals 2 pound samples of red and black plied sheet stock are fed below the brown stock feed. Thus streaks of red and black are produced in the brown sheet. This mottled sheet is rolled up on a drum to any desired thickness. It is then cut from the drum forming a slab of plies of mottled color. The slab is next cut in thin slices edgewise of the plies giving strips with the desired grain effect.—Jacob C. Housekeeper, assignor to The Inland Manufacturing Co., both of Dayton, Ohio.

1,610,286 Article combining sponge rubber and fibrous material. Harry M. Hood and Frank V. Wedlock, assignors to Featheredge Rubber Co., Inc., all of Chicago, Illinois.

1,610,942 Endless belt. John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,611,093 Heel. Leo S. Whitehead, Akron, Ohio.

1,611,400 Rolling rubber fabrics for tires. Oliver H. Andrews, Stamford, Connecticut.

1,611,927 Preparing bias cut laminated strips. Thomas Midgley, Hampden, assignor to the Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,611,998 Tire casing. Jackson D. Comstock, Chester, West Virginia.

1,612,325 Tire building. Edward C. Taylor, Longmeadow, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,614,024 Treating automobile tires and products resulting therefrom. Harley H. Allyn, Norwich, Connecticut, assignor to Joseph S. Williams, Wallingford, Pennsylvania.

1,614,348 Terra cacutchouc block. Lionel Cresson, Singapore Straits Settlements.

Dominion of Canada

256,925 Vulcanization. The Fisk Rubber Co., Chicopee Falls, Massachusetts, assignee of Arthur A. Frank and Daniel Edward Hennessy, Milwaukee, Wisconsin, all in the U. S. A.

United Kingdom

259,515 Connecting uppers to insoles and soles. J. F. Lovell, 92, Trinity Road, Upper Tooting, London.

259,633 Connecting uppers to insoles and soles. Shoe Inventions, Ltd., 1, Hood street, and F. E. Rice, 42, The Broadway, both in Northampton.

260,084 Tire bead and like covered cores. T. Sloper, Southgate, Devizes, Wiltshire.

260,383 Connecting uppers to insoles and soles. E. C. Searles, 13, Woodville Road, Thornton Heath, Surrey.

260,593 Vulcanizing insulators. Studien-Ges. Für Wirtschaft U. Industrie, 11 Koniginstrasse, Munich, Germany.

260,909 Connecting uppers to insoles and soles. A. C. Holms, 33, Ingleby Drive, Dennistoun, Glasgow, and D. Boyd, The Bungalow, Kilmaurs.

New Zealand

56,074 Artificial flowers. Doris Sophie Munn, 3 Tarbet street, Gourock, Scotland.

Germany

438,668 Method of producing perforated bands, particularly rubber perforated bands. Firma Otto Kruse, Barmen.

New Goods and Specialties

Fadeless Rubber Flowers

EXACT reproductions of natural flowers embracing a wide variety of blooms, such as roses, carnations, poppies, violets, thistles, etc., are made under the patents of Mrs. McGarvie Munn, designer of the Désirée fadeless rubber flowers. The blossoms are supplied semi or full-blown, or as tiny buds to be used as boutonnières. Shoulder straps or corsage bouquets are made up with all rubber foliage or with specially preserved natural maidenhair fern. The smoothness of the rubber prevents dust from clinging to the petals, and however crushed or soiled they become, the application

Désirée Rose Spray

of a little cold soapy water quickly restores them to their original freshness. To further create the illusion of natural flowers, perfumes may be imparted, which, of course, must be replenished after each washing. As a decorative flower, the large Oriental poppies can be had in a great variety of colors to harmonize with any scheme of decoration, many attractive effects being possible as the blooms may be opened or closed at will.—P. B. Cow & Co., Ltd., 46-47, Cheapside, London, E. C. 2, England.

Pliable Concrete Cement

This cement is made with a rubber base and may be used as a general adhesive for leather, wood, fabrics, etc. It is water, acid and weatherproof and eliminates all tacking and sewing. The manufacturer is Ira I. Slomon, 171 Thompson avenue, Long Island City, New York.

New Type Garter for Rolled Stocking

The manufacturer claims for this garter many advantages over the old style web type. It is made of pure gum tubing formed into rings by telescoping and cementing and will not bind, twist nor interfere the circulation. The garter may be used either above or below the knee and will always stay put wherever placed, holding the seam straight and preventing the stocking from wrinkling. Because of the elastic air rolled cushion, it always forms a perfect roll, which can never slip nor unroll. The Air Rolled garter is most sanitary and comfortable to the wearer, and for best results should be smaller than leg measurement.—The Novelty Rubber Sales Co., 342 West Market street, Akron, Ohio.

Air Rolled Garter

Hose Protector and Heel Rest

A device to eliminate the wear on stockings caused by shoes rubbing against the hose, prevent heel blisters and do away with side gap, has been designed by Lyons Hose Protector Co., Box 162, Omaha, Nebraska. This combination hose protector and heel rest not only holds the shoe firmly at the heel, but also extends down under the heel and relieves the jar in walking. The protector is made especially for pumps, dancing slippers and oxfords, the soft, spongy material from which it is manufactured forming a cushion for the heel, making of walking a delightful exercise.

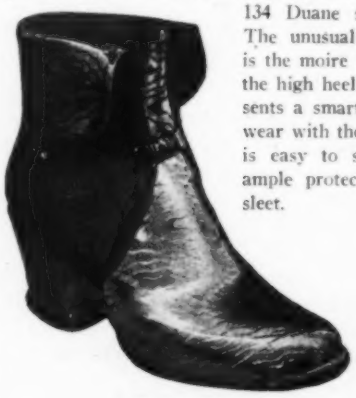
Combined Protector and Rest

Concealed Door Check

Strong cords are closely woven around a steel spring in the center of this new door check, a heavy vulcanized casing of rubber welding them together. The check is stiffened and held in alinement by the spring, and the cords are very durable, strong enough to support a dead weight of 800 pounds.—Concealed Check Co., Inc., Kokomo, Indiana.

Dressy Overshoe

The great demand for dressy gaiters is responsible for the appearance of the Slik-R, made by the Lambertville Rubber Co., 134 Duane street, New York, N. Y. The unusual feature of this overshoe is the moire vamp and cuff which, with the high heel and black jersey top, presents a smart, trim effect, fitting it for wear with the most modish costume. It is easy to slip on or off and forms ample protection from snow, slush or sleet.



The Slik-R

Side Driving Endless Belt

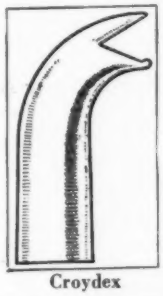
A patent has recently been granted the B. F. Goodrich Co., Akron, Ohio, covering the construction and method of manufacturing an endless belt of the side driving type, made of vulcanized rubber and fabric. Engineers have long recognized the superiority in the wedging grip of a V-drive over the flat belt type, but it was not so easy to devise a durable belt for this service which could be sold at a reasonable price. Apparently the problem has now been definitely solved. The patent issued the Goodrich company, on an application filed in 1921, covers the construction and method of making these rolled belts, both in the round and V sections, either with or without a reinforcing core. It is reported that Durkee-Atwood, Minneapolis, Minnesota, has a license from Goodrich and that these types of belts are being marketed by both companies.

Seamless Molded Nipple

The Lullaby nipple is made of pure transparent plantation rubber vulcanized by heat in steel molds, absolutely non-poisonous and practically anti-hygroscopic. It is seamless, molded in one piece, and is perfectly sanitary because it has no internal or other ribs. The nipple may be safely boiled for sterilization and is reversible, to be used either for hard or soft feeding. The design is novel and of proved advantage, having a specially thickened bulbous end, which baby may hold, and will fit any small mouthed bottle. The tapered band grip with angular ridge permits it to be easily slipped on and as easily slipped off, but it cannot be pulled off in use. Every nipple carries a three-year guarantee, in all climates.—Reliance Rubber Co., Ltd., 212-213 Upper Thames street, London, E. C. 4, England.

Non-Splash for Taps and Teapot Spout

This non-splash is guaranteed not to choke or blow off. The baffle ensures an oil like flow, a valuable asset to the photographer and chemist as well as for household service. The Ever Clean is made in two sizes only, No. 1 and No. 2.



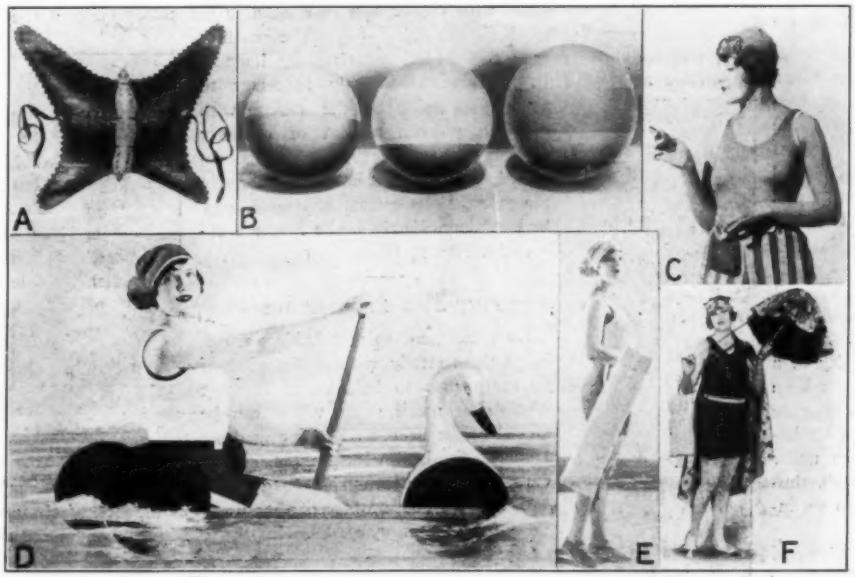
Croydex

Made of finest tasteless rubber, the following new features are embodied in the teapot spout illustrated, another product of the New Croydon Rubber Co., 110-12 Southwark street, London, S. E. 1, England. To prevent splitting, the walls are thickened wherever necessary, while the tapered construction enables it to be used on all size teapots.

Lady Edison Bathing Novelties

Since Florida has become the Riviera of America, the season for bathing accessories' display has changed and store windows are filled with bright colored bathing costumes, usually facing icy, snow covered streets. A great many of the most attractive novelties in this line are designed by a woman who, under the name of Lady Edison, justifies that appellation by the number and variety of her inventions. Lady Edison in reality is Miss Beulah Louise Henry of New York, N. Y.

The illustration shows a few of her most recent designs, the Bals' Air boat so light that when deflated and carried in a bag weighs only 3½ pounds, adding nothing to the bulk of the traveling luggage. The seat and shafts of the boat are made of Balsa wood covered with shelter duck, the heavy pure gum bladders covered with attractive rubberized material and fitted with safety valves. The slippers worn by the young lady carrying the boat are one strap pattern of rubberized satin overlaid with white linen net.



A—Butterfly Pillow

B—Roll 'Round Balls

C—C-Grip Safety Pocket

D—Bals' Air Boat

E—Boat Deflated and Carried in Bag

F—Combination Parasol and Bag

For exercise on the beach after the swim, there is the Roll 'Round ball made with invisible opening and, an unusual feature, a perfectly round ball in five, three or two colors. The Butterfly float may be used either as a pillow or float, the bright Persian design of the rubberized material simulating the colors of a real butterfly. Its shape allows it to be tied over the shoulders or under the arms, for either floating or swimming, insuring perfect freedom of motion. To protect the powder, cigarettes, matches, etc., is the C-Grip safety pocket which the inventor claims is absolutely watertight and secure. In the lid, which screws on like the top of an ice bag, is a round mirror which will help to restore order to the havoc caused by water, wind and exercise.

A bag, which may be converted into a parasol, will be welcomed by the bather as, having no inner stretches, it allows ample space for carrying the bathing suit and other accessories. It is made of brilliantly colored floral cretonne, rubberized on the inner side in various shades, rod and handle in colors to match. By simply drawing the cord the parasol again becomes a bag, easy to carry on the arm. Another type of bag is made entirely of rubber with pretty little faces at the top, and hands, inserted through slits, holding dainty little rubber flowers. The bag clasps in the back, which is also provided with a strap with which to carry it.

Miss Henry is also the inventor of the Spring-Limb Zoo which has been so popular the past season, these animals being formidable rivals of the Teddy Bears and Kewpies. The zoo is made up of twelve brilliantly colored impersonations of animals. The limbs can be twisted in the most ludicrous positions, the joints of coiled wire, the body of cotton and covered entirely with a soft skin of rubber. All of these novelties are manufactured by E. A. Guinzburg, 302 Fifth avenue, New York, N. Y.

Sheet Rubber Chess Board

A sheet rubber chess board that may be folded in the smallest possible space has recently been brought out by the Internationale Continental Caoutchouc Compagnie, Vahrenwalder str. 100, Hannover, Germany. This handy little device will be appreciated by the traveler, who may while away some of the tedious hours of his trip playing chess with a board which fits in a tiny corner of his suitcase.

Faseal Overshoe

Slide Gaiter

These days of slush and snow and ice make of the gaiter a very necessary part of the wardrobe, and the pictured Faseal slide gaiter has a special appeal because of the ease and speed with which it may be slipped on or off. No slipping, no clogging, no bother. The gaiter is made of fleece lined jersey, light and warm, the hand tailoring giving a slim, smart appearance to the foot, and the Multifit sole easily adapting itself to the shoe. The Faseal is serviceable, made for long wear, besides giving the stylish effect now demanded in all rubber footwear.—Firestone Footwear Co., Hudson, Massachusetts.

Rubber Bathing Suit

A rubber bathing suit is the latest invention developed in the rubber city, the illustration showing the first, genuine made-in-Akron suit recently donned for the first time by a fair visitor at a southern lake resort. The waterproof bathing attire is of flesh color finished with trimmings of plaited green rubber, and laces under the arms and at the lower part of the legs in order to facilitate the putting on and off of the suit. It is decidedly form fitting, but has the advantage of being elastic, so that it will not hinder a swimmer's movements, giving perfect freedom while in the water.

Swimming Suit

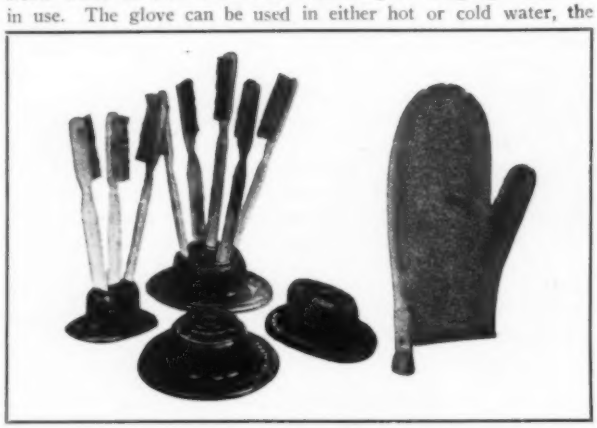
It is claimed that this suit will dry in a few moments after the bather emerges from the plunge, and that street clothes may be put on over it almost immediately with impunity. It can, of course, be worn under the clothing when going to the beach, thus saving the time ordinarily required to get into the proper attire.

The inventor, H. V. Knapp, is inspector of naval balloon and airship materials at the Goodyear Tire & Rubber Co., Akron, Ohio. He expects to manufacture and market the suits some time this year, ready for the summer's demand.

Bath Room Accessories

A new and useful novelty is a tooth brush holder made of solid rubber with highly finished enamel surface. The holder is hollowed out underneath to grip and stand firmly, and will take any size tooth brush. It is very light in weight and takes up very little room. The device may be obtained with either three or five cavities, the former being particularly recommended for traveling.

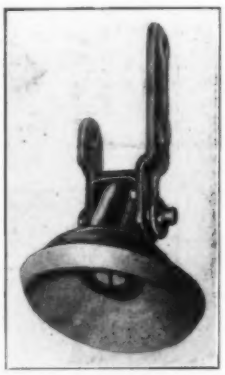
The same manufacturer also markets a bath glove made from specially corrugated rubber in pink or white colors, perforated to allow water to drain and fitted with loop to hang up when not in use. The glove can be used in either hot or cold water, the roughened surface imparting a healthy and pleasing glow, making the skin soft and white—James Lyne Hancock, Ltd., 266, Goswell Road, London, E.C.1, England.



Tooth Brush Holder and Bath Glove

Plaster Cord Patch

The extreme flexibility of this patch withstands the great amount of flexing and stretching of balloon tires, a condition that renders efficient patching of these tires a difficult problem. It is circular, made of several plies of new cord fabric impregnated with rubber and reinforced in the center between the plies in shock absorbing disk. The patch is gum coated and protected by holland. In applying, it is only necessary to wash the inside of the casing with gasoline, put on a coat of ordinary patching cement to the area to be repaired, pull off the holland and apply the patch. The casing, of course, may be used immediately.—The Miller Rubber Co., Akron, Ohio.



Surefeet

Non-Slip Ladder Feet

An attachment to step ladders which keeps them steady without the need of an extra man to hold them, Surefeet consists of metal shoes which can be locked at the proper angle for working ladders, finished with rubber suction cups, which are invaluable on greasy, oily, mosaic, etc., surfaces. The rubbers are reinforced, thus doubling the life of the attachment.—H. C. Slingsby, 89, Kingsway, W.C.2, London, England.

Rubber Artificial Breast

A novelty recently placed on the market is a rubber breast, which may be used singly, and has been generally adopted by those recovering from a cancer operation. It is made of flesh tinted rubber and, being inflatable, the device may be adjusted to conform to the natural figure of the one wearing it. As shown in the illustration, the attached tube is used as the means of inflation, and the striking feature of the device is that one only may be used. The manufacturer is the Reliance Rubber Co., Ltd., 212-213 Upper Thames street, London, E. C. 4, England.

Rubber Breast

Editor's Book Table

Reviews

"A REVIEW OF THE RUBBER POSITION, NOVEMBER, 1926." By Lt. Col. I. C. G. Kunhardt. Introduction by A. W. Still. Published by *The Investors' Chronicle*, London, England. Paper, 24 pages, 5 by 7 inches.

HAVING traveled widely in the Far East, and for years a student of the problems of the rubber industry, the author's opinions are of particular interest at the present time. Some of them may be summarized as follows: In a year or two the world's existing sources of rubber supply will reach their maximum, and they cannot be increased within a smaller period than seven years; existing world stocks (both raw and manufactured) are below normal, the present London stock of 45,000 tons being roughly 30 per cent below the amount necessary for the well-being of the trade; unrestricted production in 1927 is estimated at 640,000 tons, with a similar total for 1928, if stimulated by rising prices, after that year there are indications of a decline to between 620,000 and 630,000 tons by 1931; meanwhile consumption will tend to increase yearly by about 10 per cent, with prices rising during the next four or five years; an early recovery from the present condition of the market is also probable, while during the first part of 1927 "wear and tear" consumption will definitely overtake full and unrestricted production.

"VOLATILE SOLVENTS AND THINNERS USED IN THE PAINT AND VARNISH INDUSTRIES." By Noel Heaton, New York, N. Y. D. Van Nostrand Co., 1926. Cloth, 158 pages, 6 by 9½ inches, with index.

This handbook is one in the series of Oil and Color Monographs edited by R. S. Morrel. It treats in a most practical way the source, preparation, nature and uses of the following groups of solvents and thinners: petroleum hydrocarbons; coal-tar hydrocarbons; turpentine group; alcohol group; ketones and ethers; esters; hydrocarbon chlorides; and sulphur derivatives.

The rubber chemist and compounder will find it a valuable laboratory reference on gasoline, solvent naphtha, turpentine and turpentine products, acetone, chlorine and sulphur derivatives.

"THE RUBBER ASSOCIATION MANUAL OF TIRE REPAIRING." Prepared by The Rubber Association of America, Inc., New York, N. Y. Paper, illustrated, 33 pages, 7 by 10 inches.

This pamphlet should be of especial interest to every repairman and every rubber manufacturer as well, as it summarizes the results obtained by many of the leading rubber companies. There are many illustrations and full instructions regarding the "Step-Up" and "Step-Down" methods of tire repairing as well as for treating injuries to inner tubes.

"UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR MATTING, RUBBER, FOR USE AROUND ELECTRICAL APPARATUS OR CIRCUITS NOT EXCEEDING 3,000 VOLTS TO GROUND." Published by the Department of Commerce, Bureau of Standards, Washington, D. C. Paper, four pages, 7 by 10 inches.

This specification was officially promulgated by the Federal Specifications Board on May 22, 1926, for the use of the departments and independent establishments of the Government in the purchase of rubber matting for use around electrical apparatus or circuits not exceeding 3,000 volts to ground.

"THE ANALYSIS OF PIGMENTS, PAINTS AND VARNISHES." By J. J. Fox and T. H. Bowles, edited by R. S. Morrell, 1926, New York, N. Y. D. Van Nostrand & Co. Cloth, 179 pages, 6 by 9½, with appendix and index. Illustrated.

This practical handbook of the Oil and Color Chemistry Monographs will serve admirably the needs of the works control rubber chemist and compounder desiring up to date analytical methods for testing the quality of the pigments used in the rubber manufacturing industry. The pigments treated are grouped by colors. The determination of impurities is specially stressed. In both the paint and the rubber industry impurities are the essential feature for control. The analysis of mixed paints and the examination of varnishes are treated in special separate chapters and specimen analyses are given.

Greetings, Calendars, Souvenirs

Calendars

The Cleveland Equipment & Engineering Co., Swetland Building, Cleveland, Ohio, has sent its holiday good wishes in the form of a large and beautiful art calendar, attractively printed in rich color.

Another art calendar in color which represents an impressive Utah landscape is the gift of The Aluminum Flake Co., Akron, Ohio.

The Naugatuck Chemical Co., Naugatuck, Connecticut, has prepared a useful "Ever Ready" calendar, handsomely mounted in brass and intended for desk service.

The Roessler & Hasslacher Chemical Co., 709-717 Sixth avenue, New York, N. Y., has forwarded an attractive calendar, printed in color, its chief feature being the representation of a group of trout fishermen.

Continuing a plan of reproducing some of the historic buildings of New England, the Stedman Products Co., South Braintree, Massachusetts, has sent an interesting and unusual calendar representing an old New Hampshire mill.

A number of large calendars, each with some special feature, and printed in red and black or red and blue, represent gifts from the following organizations: The Lavelle Rubber Co., 320 West Illinois street, Chicago, Illinois; the Northwestern Rubber Co., Litherland, Liverpool, England; the Rubber Service Laboratories Co., Akron, Ohio; the Akron Standard Mold Co., Akron, Ohio; Bemis Associates, Inc., Watertown, Massachusetts; the Schwarzwaelder Co., 1017-1027 Wood street, Philadelphia, Pennsylvania; and the Hohwieler Machine & Engineering Co., Morrisville, Pennsylvania.

A small calendar in two colors has been sent by the American Zinc Sales Co., 331 Madison avenue, New York, N. Y., while a little calendar presented by the United Shoe Machinery Co., Boston, Massachusetts, is intended for desk use, the attached booklet supplying some interesting information regarding the earliest voyages to America.

Cards and Souvenirs

The Black Rock Manufacturing Co., 175 Osborne street, Bridgeport, Connecticut, has forwarded a large and beautiful pair of bronze book ends, the bas-relief decoration representing a full-rigged ship.

A memorandum pad, with calendar, and bound in brown leather, is the gift of De Mattia Brothers, Inc., Clifton, New Jersey.

H. Muehlstein & Co., Inc., 42nd street and Madison avenue, New York, N. Y., has sent a handsome and useful brown leather billfolder.

A black leather billfolder is also the gift of the Stamford Rubber Supply Co., Stamford, Connecticut.

John Royle & Sons, Paterson, New Jersey, have sent an attractive little leather bound notebook containing many useful items of information.

The Binney & Smith Co., 41 East 42nd street, New York, N. Y.,

sends a microphone cigar lighter. "Mike's" head and body surrounding the lighting elements, and the base too, are rubber.

The Rubber Service Laboratories Co., Akron, Ohio, has sent a little brown leather pocket case, containing a small comb and nail file.

The Akron Equipment Co., Akron, Ohio, has forwarded a steel pocket tape measure, contained in a nickel case.

A small desk clock in a mahogany case is the gift of the Clyde E. Lowe Co., 2976 East 81st street, Cleveland, Ohio.

Christmas and New Year cards, expressing the good wishes of the donors, were sent by the following: E. L. Bullock & Sons, Inc., New York, N. Y.; the Pequanoc Rubber Co., Butler, New Jersey; John Robertson Co., Brooklyn, New York; the Oak Rubber Co., Ravenna, Ohio; the Cleveland Liner & Manufacturing Co., Cleveland, Ohio; the Hartol Products Corporation, Newark, New Jersey; the E. H. Clapp Rubber Co., Boston, Massachusetts; Bowring & Co., New York, N. Y.; the Davol Rubber Co., Providence, Rhode Island; the Cleveland Equipment & Engineering Co., Cleveland, Ohio; the Akron Standard Mold Co., Akron, Ohio; Mitsui & Co., Ltd., New York, N. Y.; E. M. & F. Waldo, Inc., New York, N. Y.; Frederick J. Maywald, Belleville, New Jersey; the Coutlee-Muir Rubber Co., Ltd., Montreal, Canada; the Brass Goods Manufacturing Co., Brooklyn, New York, and The Technical Press, New York, N. Y.

We thank those who have so kindly remembered us with these gifts, and sincerely wish them continued happiness and prosperity.

Abstracts of Recent Articles

A NEW METHOD FOR DETERMINING THE LENGTH OF COTTON FIBERS.—E. E. Chandler. A preliminary report. U. S. Dept. of Agriculture, Cotton Division, Bureau of Agricultural Economics, August, 1926.

RUBBER AS LINING FOR GRINDING MILLS.—B. W. Rogers, *Ind. & Eng. Chem.*, January, 1927, pp. 158-9.

RUBBER AS A SOLUTION OF CORROSION AND ABRASION PROBLEMS.—H. E. Fritz, *Ind. & Eng. Chem.*, January, 1927, pp. 130-32.

A NEW HYPOTHESIS OF RUBBER STRUCTURE BASED ON MOST RECENT X-RAY RESEARCHES.—Ernst A. Hauser, *Ind. & Eng. Chem.*, January, 1927, pp. 169-70.

AN OUTLINE OF THE LAW OF CHEMICAL PATENTS.—Edward Thomas, *Ind. & Eng. Chem.*, January, 1927, pp. 176-180.

SOME FACTORS THAT AFFECT THE FRICTIONAL PROPERTIES OF AUTOMOBILE BRAKE LININGS.—H. H. Allen, *Jour. S. A. E.*, January, 1927, pp. 77-85.

CUSHION TIRES AND THEIR RELATION TO THE VEHICLE OPERATOR'S TIRE PROBLEM.—A. L. Schaff, *Jour. S. A. E.*, January, 1927, pp. 105-110 and 155.

BALLOON TIRES FOR USE WITH DROP CENTER RIMS.—B. J. Lemon, *Jour. S. A. E.*, January, 1927, pp. 112-119.

INFLUENCE OF DIPHENYLGUANIDINE ON THE MECHANICAL PROPERTIES OF VULCANIZED RUBBER.—L. Stoll, *G. Z.*, 1926, 41, pp. 193-196.

COOPERATIVE ADVERTISING. This paper advocates the use of cooperative advertising in the rubber industry and indicates in what manner it can be applied still further with advantage.—W. F. V. Cox, *R. A.*, (London), January, 1927, pp. 465-67.

RUBBER AND ITS APPLICATION TO ENGINEERING. A review.—H. P. Stevens and B. D. Porritt, *Bull. R. G. A.*, December, 1926, pp. 643-654, Graphs.

PAPUA, THE FUTURE MALAYA.—S. R. Smith, *R. A.*, N. Y., January 10, pp. 345-46.

OBSERVATIONS ON EBONITE.—Albert Hutin, *Le Caoutchouc et la Gutta Percha*, English Translation, *I. R. J.*, December 11, 1926, pp. 1067-1068.

CLOTH DYEING FOR RUBBER PROOFING.—H. L. Hockney and C. W. Bancroft, *I. R. J.*, January 8, 1927, pp. 13-15.

GRAIN PHENOMENA. A review of M. W. de Visser's thesis on the "Calender Effect and the Shrinking Effect of Unvulcanized Rubber."—R. W. Lunn, *I. R. J.*, January 8, 1927, pp. 75-7.

ROSIN OIL AS AN EMOLLIENT.—Felix Hebler, *G. Z.*, January 1, 1927, pp. 761-62.

Rubber Trade Inquiries

The inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The Editor is therefore glad to have those interested communicate with him.

NUMBER	INQUIRY
909	Manufacturer of artificial sun checking apparatus.
910	List of manufacturers of druggists' sundries.
911	Names of rubber compounders.
912	Makers and source of supply for golf ball apparatus and stock.
913	French manufacturer wishes American agent for graphite.
914	Manufacturers of holland.
915	Source of supply for bath plugs with mount molded in the rubber.
916	Makers of aging test ovens.
917	Manufacturers of molded rubber flaps.
918	Firms making lead presses.
919	Importers of latex.
920	Manufacturers of corrugated braided hose.
921	Firms specializing in compounding stocks according to formula furnished by customer.
922	Manufacturers of printers' blankets.

Foreign Trade Information

For further information concerning the inquiries listed below, address United States Department of Commerce, Bureau of Foreign and Domestic Commerce, Room 734, Custom House, New York, N. Y.

NUMBER	COUNTRY AND COMMODITY	PURCHASE OR AGENCY
23,387	Italy. Bathing caps, shoes, belts, and rubber sponges	Purchase
23,395	Turkey. Druggists' rubber sundries	Agency
23,495	Sweden. Rubber bathing caps	Purchase
23,496	Greece. Automobile balloon tires	Agency or purchase
23,506	Spain. Tire repair material	Purchase
23,509	Greece. Automobile accessories and supplies, especially self-vulcanizing tube repair kits	Purchase and agency
23,526	Italy. Crude rubber, especially sprayed rubber	Agency
23,583	Australia. Rubber sporting goods	Purchase and agency
23,628	Greece. Automobile tires	Agency
23,646	Germany. Rubber novelties, notions, and druggists' sundries	Purchase and agency
23,647	Canada. Toy balloons	Agency
23,648	Italy. Rubber belting	Agency
23,649	Austria. Automobile and motorcycle tires	Agency
23,654	Italy. Druggists' rubber sundries	Agency

Foreign Trade Circulars

Special circulars containing foreign rubber trade information are now being published by the Rubber Division, Bureau of Foreign and Domestic Commerce, Washington, D. C. The publications which give details of the rubber industry in some one country are marked with an asterisk.

NUMBER	SPECIAL CIRCULAR
1361	"Tire Exporters' Weekly News Letter."
*1362	"Crude Rubber Reexports from the United States; Month of November, 1926."
1364	"Mechanical Rubber Goods Exporters' Monthly News Letter."
*1365	"Canadian Tire Exports During November, 1926."
1367	"Tire Exporters' Weekly News Letter."
*1371	"Norwegian Automotive Rubber Goods Trade, 1926."
1372	"Tire Exporters' Weekly News Letter."
1375	"Rubber Footwear Exporters' Monthly News Letter."
*1376	"French Tire Exports During Month of November, 1926."
*1377	"French Rubber Footwear Exports During Month of November, 1926."
1379	"Tire Exporters' Weekly News Letter."

Chemical Foundation Patents

The unanimous decision of the United States Supreme Court October 11, 1926, ended the effort to require the Chemical Foundation to return the dye and chemical patents, numbering 4,500, besides trademarks and copyrights sold to it in 1919 by the Alien Property Custodian. The following statement of the case is quoted from the opinion of the court delivered by Justice Butler.

"The complaint alleges that a number of domestic manufacturers, as a result of war conditions, had been able to combine and monopolize certain chemical industries in this country; and fearing that at the end of the war German competition would destroy the monopoly, they conspired to bring about transfers and sales of the patents at nominal prices to themselves or to a corporation controlled by them; that the patents so obtained would control the industries in question and perpetuate the monopoly, and that the sales were procured through the fraudulent deception of the President, the Alien Property Custodian and other officials. The answer denies conspiracy and fraud and asserts that the transfers were made in good faith and pursuant to law and that they are valid."

Among the 4,500 patents involved in the case are the following:

PATENTS RELATING TO RUBBER

Patent No.	Title
906,306.	Process for vulcanizing a rubber solution.
916,520.	Method of manufacturing solutions of caoutchouc.
921,148.	Process for regenerating rubber waste of all kinds.
922,524.	Method for testing the tensile strength of elastic materials.
924,584.	Process of obtaining pure caoutchouc, gutta-percha, and the like.
935,414.	Rubber.
951,811.	Utilization of waste rubber.
953,094.	Process for devulcanizing india rubber.
953,319.	Manufacture of plastic masses.
960,116.	Method of producing a caoutchouc-like elastic substance.
964,244.	Separator.
1,003,244.	Purifying rubber or gutta-percha.
1,006,274.	Process for the manufacture of rubber substitute.
1,018,329.	Process of producing sulphur derivatives derived from glycerin.
1,026,418.	Producing diolefins.
1,026,419.	Producing diolefins.
1,026,420.	Producing diolefins.
1,031,837.	Proce s of manufacturing caoutchouc-like products.
1,037,158.	Process of manufacturing substitutes for oils, caoutchouc, resins and the like.
1,048,892.	Apparatus for extracting rubber.
1,052,430.	Vulcanizing distinct parts or surfaces of rubber.
1,061,881.	Process for the production of a plastic or elastic substance.
1,062,973.	Producing rubber-like compounds.
1,086,139.	Process of manufacturing caoutchouc-like products.
1,087,815.	Elastic padding and filling composition.
1,088,907.	Process of manufacturing a substitute for vulcanite.
1,099,107.	Process for the manufacture of a substance resembling natural rubber.
1,104,722.	Vulcanizer.
1,122,465.	Vulcanizer press.
1,189,110.	Producing substances resembling caoutchouc.
1,192,310.	Caoutchouc-like substances and process of making them.
1,218,332.	Manufacture of diolefins (isoprene), caoutchouc, and caoutchouc-like substances.
1,218,713.	Production of caoutchouc-like bodies.
1,238,930.	Synthetic product resembling caoutchouc.
1,248,888.	Treating products resembling caoutchouc.
1,260,684.	Rubber-mixing machine.
1,294,662.	Producing substances resembling caoutchouc.
1,399,473.	Process of manufacturing caoutchouc-like substances.

PATENTS PERTAINING TO SYNTHETIC RUBBER

Patent No.	Title
1,026,418.	Producing diolefins.
1,026,418.	Producing dialefins.
1,026,420.	Producing diolefins.
1,032,822	Producing halogenated paraffin hydrocarbons.
1,045,139.	Process of making chlorinated hydrocarbons.
1,057,680.	Production of isoprene.
1,062,973.	Producing rubber-like compounds.
1,065,182.	Producing isoprene.
1,070,294.	Producing butadiene and derivatives thereof.
1,083,164.	Producing isoprene.
1,083,165.	Producing isoprene.
1,087,261.	Process of making isoprene.
1,098,858.	Producing chlorin derivatives of the amyl series.
1,098,859.	Producing isoprene.
1,099,107.	Process for the manufacture of a substance resembling natural rubber.
1,102,654.	Producing 2.3-dihalogen—2-methylbutane and homologues thereof.
1,102,655.	Producing iso-olefins.
1,168,070.	Manufacture of isoprene and homologues thereof.
1,189,110.	Producing substances resembling caoutchouc.
1,192,310.	Caoutchouc-like substances and process of making them.
1,202,282.	Process of producing 2-chlor-isopentane.
1,218,332.	Manufacture of diolefins (isoprene), caoutchouc, and caoutchouc-like substances.
1,218,713.	Production of caoutchouc-like bodies.
1,238,930.	Synthetic product resembling caoutchouc.
1,248,888.	Treating products resembling caoutchouc.
1,294,662.	Producing substances resembling caoutchouc.
1,298,929.	Producing isoprene.
1,399,473.	Process of manufacturing caoutchouc-like substances.

Legal Decisions

Lambert Tire & Rubber Co., a corporation, assignee of William A. Brubaker. No. 1,855. Decided June 1, 1926. Court of Appeals of the District of Columbia.

Appeal from a decision of the Patent Office rejecting the claims of appellant's application for an automobile tire design, on the design patent to Follen, No. 55,600.

The court agrees with the Patent Office that applicant has taken the elements of Follen's tire and slightly rearranged them, and that such rearrangement does not amount to invention. The design of the tire exhibited at the oral argument is not the design of the application. The decision is affirmed.—*Official Gazette*, Volume 353, page 522.

Customs Appraisers' Decision

No. 1464. Protest 10419-G of C. B. Richard & Co., New York. The appraiser reports that the merchandise consists of football cases and laces composed in chief value of leather and rubber football bladders, all classified as unfinished footballs at 30 per cent ad valorem under paragraph 1402, tariff act of 1922. Opinion by J. Sullivan. In accordance with the amended report of the appraiser the protest was sustained as to the rubber football bladders which were held dutiable at 25 per cent under paragraph 1439. As the correct claim was not made as to the cases and laces the protest was overruled as to these items.—*Treasury Decisions*, Volume 50, No. 26, page 17.

Patent Suits

Patent No. 1,611,829, issued to Freedlander for driving belt. Claims of application disclosing prestretching outer or tension member involve only carrying forward from short's stretching central member.—A. L. Freedlander, ex parte, (Decision, Commissioner of Patents). A driving belt comprising a compression member composed of rubber mixed with fiber and having corrugations on the inner surface, a central member composed of rubberized cord fabric, and a tension member composed of rubberized fabric cut on the bias, the material of the central member being laid on the compression member and that of the tension member on the central member.

Patent No. 1,611,830 issued to Freedlander, for driving belt. There is nothing inventive in using steps adopted by Gates with materials noted by Price, but placing fiber or strands crosswise the material in a belt is not analogous to use of cross fibers in shoe sole.—A. D. Freedlander, ex parte (Decision, Commissioner of Patents).

Patent No. 1,611,400 issued to Andrews for improvement in rolling rubber fabrics for tires. Applicant having originally claimed viscose or cellulose xanthate as coating material for separating strip, and on appeal sought to claim regenerated cellulose, rejection of claims was affirmed, but upon Board of Examiners being convinced viscose or cellulose xanthate was unsuitable, applicant was allowed to claim regenerated cellulose.—O. H. Andrews, Appeal (Decision, Examiners-in-Chief.)

Adjudicated Patents

Patent No. 900,055, The Burnham patent for squeeze roll in wool-washing machinery, held invalid. C. C. N. J. Wilkie v. Manhattan Rubber Manufacturing Co., 14 F. (2d) 811.—*Official Gazette*, Volume 353, page 524.

Patent No. 1,597,233, R. V. Heuser, vulcanization of rubber, suit filed October 25, 1926, D. C., N. D. Ohio (E. Div.), Doc. 2034, A. C. Burrage et al. v. Rubber Service Laboratories, Inc.—*Official Gazette*, Volume 353, page 728.

Patent No. 1,119,326, Thropp & De Laski, machine for making or building up pneumatic tires, suits filed September 28, 1926, D. C. N. J., Doc. E 2147, De Laski & Thropp Circular Woven Tire Co. v. Century Plainfield Rubber Co. Doc. E 2148, De Laski & Thropp

Circular Woven Tire Co. v. Sterling Tire Corporation.—*Official Gazette*, Volume 354, page 5.

Patent No. 1,570,298, A. H. Fisher, Method and means for repairing tire casings, suit filed November 5, 1926, D. C. Nebraska. Omaha, Doc. E 841, Kex Co., Inc., v. H. M. Watson (Star Sales Co.).—*Official Gazette*, Volume 354, page 6.

Patent No. 1,597,233, R. V. Heuser, Vulcanization of rubber, suit filed October 25, 1926, D. C., N. D. Ohio (E. Div.), Doc. 2034, A. C. Burrage et al. v. Rubber Service Laboratories, Inc. Final consent decree, perpetual injunction granted November 18, 1926.—*Official Gazette*, Volume 354, page 250.

Disclaimer

Patent No. 1,564,158. George E. Warren, Swampscott, Massachusetts. Cushion heel. Patent dated December 1, 1925. Disclaimer filed December 16, 1926, by the assignee, United Shoe Machinery Corporation.

Hereby enters this disclaimer to said claims 1 and 2 of said Letters Patent, which are in the following words, to wit:

1. A rubber heel normally of concavo-convex form deformable to flatness and having an unbroken edge surface of rubber from its tread face to its attaching face, having a relatively thin layer of substantially inextensible material at its attaching face so that the neutral axes of the heel lie approximately at its attaching face.

2. A deformable heel normally of concavo-convex form having an unbroken edge surface of rubber from its tread face to its attaching face, said heel having at its attaching face a layer of substantially inextensible material which is perforable by nails, said layer being relatively thin, to cause the neutral axes of the heel to lie approximately at its attached face.—*Official Gazette*, Volume 354, page 6.

Grasselli-National Aniline Patent Suit

In an opinion handed down January 24, 1927, by District Judge Augustus A. Hand of the Southern District of New York, in the case of the Grasselli Chemical Co. vs. National Aniline & Chemical Co., the claims in suit were held invalid for lack of invention and the decree was granted dismissing the bill with cost. Judge Hand states, however, that the patent, if valid in other respects than the claims in issue, covers hexa and aldehyde ammonia. Certain licensees paid royalties for these substances before diphenylguanidine or triphenylguanidine were thought of.

The patent sued on was No. 1,149,580, issued to Kurt Gottlob and Fritz Hofmann, assigned to the Bayer Company. The patent was seized by the alien property custodian and sold to the Grasselli Chemical Co.

PRESENT DAY TIRE VALUE

Today's tire dollar buys twenty-seven times as much as does the dollar spent for other commodities, according to Miller tire men. This estimate is based on the increase in tire mileage performance, and decreases in present tire prices and dollar purchasing power.

Here is the way it works out. The tire of a decade ago was built to deliver a mileage of 3,500. Improvements in tire building—flat top, road shaped uniflex carcass, produce tires that give today's motorist four to eight times that mileage expectancy.

As for tire prices, a 32 by 4 cord tire sold eight years ago for $56.65. Today's figure is placed at about $18.00 or one-third of the earlier price. This two-thirds reduction in cost accompanied by a return of six times the value based on performance, if taken alone, would give a valuation of $326.34.

But this is not all. The present day dollar is buying an average of only 67 cents' worth of commodities, as compared with its former purchasing ability. Taking this into consideration, the present 32 by 4 cord tire is given a valuation 27 times greater than its earlier price. This means that on a basis of ten years ago, the modern motorist would be paying $489.51 for the same number of tire miles that he is able to buy today for $18.13. The enormous difference of $471.38 is part of the dividends paid to motorists by virtue of greater efficiency in tire building and superior design.—Miller Rubber Co.

EUROPE'S AFTER-WAR READJUSTMENT

The year 1927 should prove to be for European nations the closing year in the period of after-war readjustments. This was the prediction made by Paul M. Warburg, international banker and chairman of the International Acceptance Bank, Inc., in his annual report submitted to stockholders at their annual meeting yesterday.

"From a violently disturbed sea of unfettered inflation," Mr. Warburg says, "we see the world now emerging into the smooth waters of balanced budgets and stabilized currencies." After citing the numerous countries which have returned to the gold standard during 1926, he says "it would seem as if we might expect that the year just begun would see the few remaining prodigal sons returning to the fold of the gold standard family. Thus 1927 would mark the end of the period of fiscal and currency anarchy into which Europe was thrown as a consequence of the Great War."

The following changes in the bank's official staff were announced: H. J. Rogers, formerly assistant vice president, W. H. Schubart, manager of the foreign exchange department, and L. S. Chanler, Jr. were appointed vice presidents; C. B. Hall, assistant vice president, was elected secretary; and J. A. Milholland became assistant treasurer.

RAPSON TIRE PLANT IN TASMANIA

The Rapson Tire & Rubber Co. (Australia), Ltd., Hobart, Tasmania, is building and equipping a factory in Tasmania where 3,000 Rapson tires will be made weekly. The company's capital is £1,000,000 of which £500,000 has been subscribed. The Tasmanian Government has guaranteed dividends for 7 years on the company's 8 per cent cumulative stock. H. L. Butler, formerly manager of the English Rapson company, is general manager and H. F. J. Coe is chief engineer of the new Australian company.

THE RUSSIAN RUBBER TRUST

Official reports of the Russian Rubber Trust indicate considerable activity among its various factories. Six million rubles will be appropriated for capital construction and repairs, 4,740,000 for new equipment and repairs and 1,260,000 rubles for new construction. Building and equipping of several departments are nearing completion at Treugolnik. The Bogatyr works have expanded and equipped the galosh department to permit increased output, while the Caouchouc has built several new shops. Finally, Factory No. 4 has built several shops and reequipped them.

TIRE INVENTORY—PRODUCTION—DOMESTIC SHIPMENTS

November, 1926

	Inventory	Production	Total Shipments
Highpressure cord casings	4,003,724	1,694,257	1,399,176
High pressure fabric casings	631,703	152,950	127,416
Balloon casings	3,162,512	1,396,292	1,273,562
Solid and cushion tires	155,910	43,619	43,355
High pressure inner tubes	8,068,230	2,355,665	1,790,429
Balloon inner tubes	4,384,791	1,283,455	1,243,944

COTTON AND RUBBER CONSUMPTION IN TIRES AND TUBES

	Pounds
Cotton fabrics	12,421,923
Crude rubber	36,736,656

Rubber Association figures representing 75 per cent of the industry.

AMERICAN PRODUCTION OF CARS AND TRUCKS DURING 1926 totaled 4,480,000 vehicles, 3,950,000 being cars and the remaining 530,000 representing trucks. The wholesale values were respectively $2,622,450,000 and $434,500,000.

EL UNIVERSAL GRAFICO OF DECEMBER 22, 1926, REPORTS THE formation of a company for retreading tires, known as the Compania Renovadora de Llantas, S. A., in Mexico City. The machinery is to be furnished by the Creusot plant in France.

Financial and Corporate News

The Fisk Rubber Co.

TO THE STOCKHOLDERSS Herein contained you will find balance sheet and profit and loss and surplus accounts for the fiscal year ended October 31, 1926.

The tire industry in 1926 contended against a drastic decline in the price of its two chief raw materials—crude rubber and cotton. Regardless of this condition gross sales less returns and allowances for the year amounted to $68,051,739.43 and operating profits after depreciation but before interest and taxes were approximately $6,000,000. As 1925 was a year of inflation in crude rubber prices and 1926 a year of deflation normal earning power may be more nearly regarded as the average of the two years.

Inventories as of October 31 were taken on a conservative basis from which is deducted an amount set aside of $1,000,000 as a reserve against possible future contingencies.

The major part of the contingency reserve of $1,500,000 set aside last year has been used for the cancellation and readjustment of fabric contracts applicable to future years.

During the current fiscal year the dividends on preferred and management stocks accumulated prior to October 31, 1925, were paid or provided for in full by the issue of $4,467,500 par value 7 per cent. first preferred convertible stock and by the payment of $660,264 in cash. Dividends for current year amounting to $1,511,150 were paid in cash.

The company is in a strong financial condition. Total current assets at the end of the year were $36,995,272 and current liabilities $2,949,825, giving a ratio of current assets to current liabilities of 12½ to 1.

The outlook is good for a satisfactory volume of business in 1927. Stabilized raw material markets should assure satisfactory profits on that business.

H. T. DUNN,
President.

CONSOLIDATED BALANCE SHEET OCTOBER 31, 1926

ASSETS

Capital Assets		
Land, buildings, machinery and equipment	$27,457,327.14	
Less—reserve for depreciation	7,168,751.91	
	$20,288,575.23	
Goodwill	1.00	
		$20,288,576.23
Investments		
No. 1767 Broadway Co., Inc. (Fisk Building)	$1,496,500.00	
The Fisk Tire Fabric Co. (representing land and buildings, less $1,700,000 of 6½% sinking fund gold bonds)	766,562.50	
Miscellaneous investments	874,834.61	
		3,137,897.11
Current Assets		
Inventories at approximate cost or market whichever is lower (less reserve)	$23,525,872.59	
Accounts receivable, less reserves ($1,263.-394.74)	9,712,751.60	
Notes receivable	200,542.20	
Cash in banks, on hand and in transsit	3,556,106.04	
		36,995,272.43
Deferred charges including expenses of bond and note issues		1,665,839.89
		$62,087,585.66

LIABILITIES

Capital Stock		
7% Cumulative first preferred		
Authorized 200,704 shares par $100	$20,070,400.00	
Outstanding 178,610 shares	17,861,000.00	
Less—in treasury 16,301 shares	1,630,100.00	
Outstanding in the hands of the public		$16,230,900.00
7% Cumulative first preferred convertible		
Authorized 46,303 shares par $100	$4,630,300.00	
Outstanding in the hands of the public 44,675 shares		4,467,500.00
Management stock		
Authorized and issued		$15,000.00
7% Cumulative second preferred convertible		
Authorized 9,959 shares par $100	$995,900.00	
Outstanding in the hands of the public 9,958 shares		995,800.00
Common		
Authorized 1,250,000 shares of no par value		
Outstanding 825,116 shares of no par value		8,101,495.01
		$29,810,695.01
First mortgage 20-year 8% sinking fund gold bonds, due September 1, 1941		8,370,000
Five-year 5½% sinking fund gold notes, due January 1, 1931		9,871,000.00
Current Liabilities		
Accounts payable including provision for Federal income tax		2,583,868.76
Dividends payable		365,956.50
		$2,949,825.26
Reserve for contingencies		938,568.06
Surplus		10,147,497.33
		$62,087,585.66

Dividends Declared

COMPANY	Stock	Rate	Payable	Stock of Record
Giant Tire & Rubber Co.	Pfd.	$0.50	Feb. 1	Jan. 20
Giant Tire & Rubber Co.	Com.	$0.50	Feb. 1	Jan. 20
Goodrich, B. F. Co.	Com.	$1.00 q.	Mar. 1	Feb. 15
Goodrich, B. F. Co.	Pfd.	$1.75 q.	Apr. 1	Mar. 15
Goodrich, B. F. Co.	Pfd.	$1.75 q.	July 1	June 15
Hood Rubber Co.	7½% Pfd.	$1.87 q.	Feb. 1	Jan. 20
Hood Rubber Co.	7% Pfd.	$1.75 q.	Feb. 1	Jan. 20
Stedman Products Co.	Pfd.	$1.75 q.	Jan. 3	Dec. 24, 1926
United States Rubber Co.	1st Pfd.	2% q.	Feb. 15	Jan. 20

New York Stock Exchange Quotations

January 20, 1927

	High	Low	Last
Ajax Rubber, com.	10⅝	10¼	10½
Fisk Rubber, com.	16⅜	16¼	16¼
Fisk Rubber, 1st pfd. (7)	84⅜	84	84¼
Goodrich, B. F., Co., com. (4)	47¼	47	47
Goodrich, B. F., Co., pfd. (7)	96¾	96¾	96¾
Kelly-Springfield Tire, com.	10⅛	10	10
Kelly-Springfield Tire, pfd.	40½	40½	40½
Keystone Tire & Rubber, com.	⅜	⅜	⅜
Lee Rubber & Tire, com.	7	7	7
United States Rubber, com.	60¼	59⅝	59¼
United States Rubber, 1st pfd. (8) xd	107⅞	107⅝	107⅝

Akron Rubber Stock Quotations

Quotations of January 19, supplied by Otis & Co., Cleveland, Ohio.

COMPANY	Last Sale	Bid	Asked
Aetna com.	17	17½	20
Aetna pfd.	93	90	95
Falls, com.	4⅞	2	4
Falls pfd.	18¾	10	17
Faultless com.	39½	38	39½
Firestone com.	117	117	125
Firestone 1st pfd.	101½	102	...
Firestone 2nd pfd.	99¼	99	99¼
General com.	150	...	155
General pfd.	107½	...	102½
Goodrich com.	43½	...	...
Goodrich pfd.	97¼	...	...
Goodyear com. V. T. C.	30	...	...
Goodyear pfd. V. T. C.	100	...	100
Goodyear pr. pfd. V. T. C.	107	...	...
India com.	31½	...	31½
Miller com.	34	...	...
Miller pfd.	101½	101	102½
Mohawk com.	20	...	25
Mohawk pfd.	74	...	65
Seiberling com.	22	22⅛	23
Seiberling pfd.	98	96	...
Star com.	11	...	4
Star pfd.	30	...	...
Swinehart com.	8½	...	...

CENSUS OF RUBBER-WORKING MACHINERY

According to the latest statistics available as prepared for 1923 by the Bureau of the Census and reported by 71 establishments, the value of the rubber-working machinery produced that year was $6,849,343. Figures for previous years were as follows: 1914, $2,725,897; 1919, $17,001,919, and 1921, $8,003,103. The census of manufactures, which prior to 1919 was conducted at five-year intervals, is now taken every two years.

New Incorporations

THE A 1 TIRE CO., INC., November 26, 1926 (Massachusetts), capital stock 500 shares, no par value. Incorporators, officers and directors: James Field, president and treasurer, 34 Greendale Road, Dorchester; Elizabeth F. Mulgrew, clerk, 118 Warren street, Arlington; Morris Rosenfield, 53 Hazleton street, Dorchester, and Louis H. Stone, 246 Quincy street, Boston, all of Massachusetts. Principal office, Boston, Massachusetts. To manufacture and deal in automobile tires and accessories. Also to manufacture and deal in woven hose, rubber hose and all articles of woven or rubber goods, or any articles made wholly or in part of rubber or leather.

ARISTO RUBBER CORP., December 15, 1926 (Delaware), capital stock $35,000 preferred stock, par value $100 and 1,000 shares without nominal or par value. Incorporators: T. L. Croteau, A. L. Miller and Alfred Jervis, all of Wilmington, Delaware. Principal office, with the Corporation Trust Company of America, duPont Building, Wilmington, Delaware. To manufacture, buy, sell and deal in any and all manufactured products.

ARROW TIRE CO., January 3, 1927 (New Jersey), capital stock of $125,000. Incorporators: Louis Banks and Esther Banks, both of 243 South street, Jersey City, New Jersey, and Samuel Solodar, 167 Goodwin avenue, Newark, New Jersey. Principal office, 591 Summit avenue, Arcade Building, Jersey City, New Jersey. To manufacture, buy, sell, import, export and generally deal in tires for automobiles, bicycles, carriages and vehicles of all kinds and descriptions.

BOLIVIAN RUBBER CORP., December 23, 1926 (Delaware), capital stock of $3,000,000, divided into 12,500 shares preferred stock of the par value of $100 each and 17,500 shares of common stock par value of $100 each. Incorporators: Mark W. Cole, James H. Hughes and James L. Wolcott, all of Dover, Delaware. Principal office, Dover, Delaware. To deal in rubber and the various materials entering into the manufacture of the same.

BRYANT MASON TIRE CO., INC., December 31, 1926 (New York), capital $25,000. Incorporators: George E. Thompson and Leslie L. Olmstead, 5 No. Goodman street, both of Rochester, New York, and Frank D. Bryant, Pittsford, New York. Principal office, Rochester, New York. Auto accessories.

COMMONWEALTH RUBBER CO., LTD., November 5, 1926 (Canada), capital stock 1,000 preferred shares of the par value of $100 each and 4,000 common shares without nominal or par value. Incorporators: Mary Catherine Harris, Herbert David McCurdy and Thomas Alexander Vipond, all three of the City of Montreal, in the Province of Quebec; Richard Stanley Finn and Ernest Henry Lewis, both of the City of Verdun in the Province of Quebec. Principal office, City of Montreal, in the Province of Quebec. To cultivate rubber and to carry on the business of rubber planters in all its branches. Also to manufacture and render marketable any such produce, and to sell, dispose of and deal in any such produce, either in its prepared, manufactured or raw state.

DICKINSON TIRES, INC., December 29, 1926 (Delaware), capital 1,000 shares without nominal or par value. Incorporators: T. L. Croteau, W. B. Megear and Alfred Jervis, all of Wilmington, Delaware. Principal office, Wilmington, Delaware. To manufacture articles of which rubber is a constituent part.

THE DU'ROSEAL CORP., December 20, 1926 (Delaware), capital stock of 10,000 shares Class A common stock and 5,000 shares Class B common stock, all without nominal or par value. Incorporators: T. L. Croteau, A. L. Miller, and Alfred Jervis, all of Wilmington, Delaware. Principal office, Wilmington, Delaware. To manufacture, buy, sell and deal in merchandise and all products consisting of rubber, leather, minerals, etc.

KILTONE ELASTIC TIRE PATCH CO., December 22, 1926 (Delaware), capital stock of $5,000, preferred stock, par value $50; and 500 shares common stock without nominal or par value. Incorporators: S. L. Mackey, L. C. Christy, and H. Kennedy, all of Wilmington, Delaware. Principal office, Wilmington, Delaware. To manufacture, buy, sell and deal in and with automobile tire patches and accessories of every kind and character.

MARCUS-BILLER CEMENT CO., November, 1926 (New Jersey), capital $5,000. Incorporators and officers: Morton A. Marcus, president; William L. Marcus, treasurer and secretary, both of Trenton, New Jersey, and Charles A. Malloy. Principal office, 15 Pennington avenue, Trenton, New Jersey. To manufacture rubber, leather and other cements.

MOR-MILE TRUCK TIRE SERVICE, INC., December 28, 1926 (New York), capital $10,000. Incorporators: Frank C. Rottenberger and Elizabeth J. Rottenberger, both of 1116 Curtis avenue, Richmond Hill, New York; and Matthew H. Guthrie, Baldwin, New York. Principal office, Hillside avenue near Queens Boulevard, Jamaica, New York. To deal in tires and to do repairing.

NATIONAL RUBBER & PACKING CORP., December 17, 1926 (Delaware), capital stock 200 shares, preferred stock and 400 shares of common stock. Incorporators: Osgood Sayer, Wayne, Pennsylvania; W. E. Humphreys and A. C. Ryan, both of Philadelphia, Pennsylvania. Principal office, with the Colonial Charter Company, 927 Market street, Wilmington, Delaware. To manufacture, buy, sell and deal in any article made in whole or in part of rubber, leather, fabric, etc.

THE ORALASTIC RUBBER PRODUCTS CORP., December 4, 1926 (Delaware), capital stock 2,000 shares of common stock, par value $100, and 1,000 shares preferred stock, par value $100. Incorporators: Charles Ora, Kansas City, Kansas; G. E. Minor, Kansas City, Missouri; Oscar T. Gregory, Chicago, Illinois, and C. M. Trammell, Washington, D. C. Principal office, with the Capital Trust Company of Delaware, Dover, Delaware. To manufacture flooring, paving blocks or paving material and all other kinds of goods that may be made from a combination of rubber, clay, asphaltum and other substances.

RAINSHIELD RUBBER CO., INC., December 20, 1926 (New York), capital $25,000. Incorporators: Edward Kaplan and Samuel Rosenthal, both of 317 W. 99th street, New York, N. Y., and Beatrice E. Tow, 1440 Broadway, New York, N. Y. Principal office, Manhattan, New York. Rubber and waterproof clothing.

SYN-RUB MANUFACTURING CO., December 15, 1926 (Delaware), capital stock $200,000 Class A stock, par value $20, and $50,000 Class B stock, par value $10. Incorporators: Harry C. Hand, Samuel C. Wood, and Raymond J. German, all of 150 Broadway, New York, N. Y. Principal office, with the United States Corporation Company, Dover, Delaware. To manufacture, purchase, sell and deal in all kinds of rubber.

C. O. TINGLEY & CO., December 29, 1926 (New Jersey), capital stock of 2,000 shares of preferred stock of the par value of $100 each, and 4,000 shares of common stock without par value. Incorporators: William McCollum and Mae Belle McCollum, both of 367 St. Georges avenue, Rahway, New Jersey; and Joseph Walten, 23 Dayton street, Elizabeth, New Jersey. Principal office, 6 Ross street, Rahway, New Jersey. To manufacture and deal in rubber, gutta percha, etc.

UNIVERSAL PUNCTURE PROOF TIRE CO., December 14, 1926 (North Carolina), capital $100,000. Incorporators: Virgil Pratt, Andrewstine Benton, Millie Lindsey and Augustus Turner, all of Hamlet, North Carolina. Principal office, Hamlet, North Carolina. To deal in tires and their constituents.

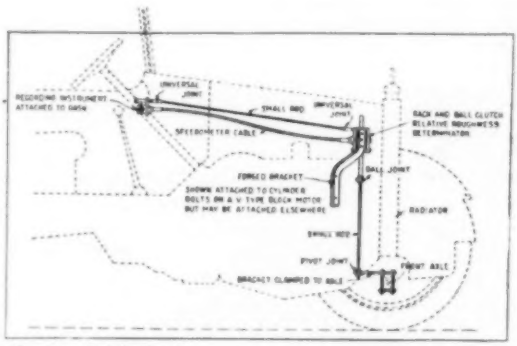
Road Testing Machine

Tire manufacturers, engineers and designers interested in the road testing of their tires will find the so-called "Roughometer," here illustrated, well adapted for recording the conditions of the road surfaces.

The fundamental principle upon which all instruments for measuring road roughness depend is that the vertical motion imparted to the vehicle by the irregularities in the road surface bears a direct relation to the degree of roughness. In order that the effect of this motion upon the chassis of the vehicle may be minimized, body springs and rubber tires are provided, the deflection of which absorbs much of the undesirable vibration. The magnitude of these deflections depends not only on the magnitude of the road roughness but also on the speed of the vehicle, amount and distribution of the load, and the type and condition of the spring and tire equipment. By maintaining constant all of these other conditions, the deflection of the body springs may be made to measure the relative roughness of the riding surfaces over which the vehicle is driven. This fact furnishes the principle on which the relative roughness determinator or roughometer, as it has been called, operates.

This instrument was developed by the United States Bureau of Public Roads for attachment to an automobile as indicated in the diagram.

Briefly, the roughometer consists of a rack which is attached in a vertical position to the front axle of the vehicle. Meshed



Courtesy Public Roads

Relative Roughness Determinator Mounted on an Automobile

with this rack is a spur gear which is supported by the frame of the car. Movement of the front axle with respect to the chassis, caused by deflection of the body springs, thus produces translation of the rack and rotation of the gear. This gear is connected through a flexible shaft to a mechanical counter on the instrument board of the automobile. Deflection of the front springs of the vehicle thus causes the rotation of the spindle of the counter. In order that this spindle will not rotate in the reverse direction when the body springs return from their deflected position a ball clutch is interposed between the gear mentioned and the flexible shaft which operates the counter. This ball clutch allows the flexible shaft to turn in only one direction so that the counter operates only during deflection of the body springs and thus records the summation of these deflections during the time the instrument is in operation.

The Rubber Industry in America

East and South

AT the beginning of the present year three members of the firm of Lawrence & Co., 24 Thomas street, New York, N. Y., selling agents for tire fabric manaufacturers, announced their retirement from active participation in the business. The three partners, who had each been with the company for more than forty years, were: Henry S. Howe, Henry C. Everett, and Henry W. Williams. The remaining members of the firm include Henry W. Howe, John S. Lawrence, Francis R. Masters, and John E. Rousmaniere.

Albert V. W. Tallman, broker in crude rubber, has formed a partnership with John de C. Van Etten, the new organization to carry on business under the trade name of Albert V. W. Tallman, 25 Beaver street, New York, N. Y. Mr. Van Etten was formerly engaged for many years in the manufacture of rubber goods.

The Omo Manufacturing Co., Middletown, Connecticut, specializing in the production of dress shields and druggists' rubber sundries, has opened a New York City office at 232 Madison avenue, at 37th street.

Charles B. Chrystal, president of the Charles B. Chrystal Co., Inc., 11 Cliff street, New York, N. Y., importer of whiting, clays and colors for the rubber industry, sailed on January 15 for Italy on the steamer Colombo. Mr. Chrystal, who is accompanied by his wife and son, is combining business and pleasure on his trip, which will include a stay of about two months in Italy, France, Spain, Belgium, Germany, Holland, and England.

The United States Rubber Co., 1790 Broadway, New York, N. Y., has established a wholesale distributing branch at 1032 North Miami avenue, Miami, Florida, the new division to be under the management of Leo Lindsey.

The Grasselli Chemical Co., 347 Madison avenue, New York, N. Y., reports that increased demand for Grasselerator No. 808 has made it necessary to double the capacity of the plant. A complete technical service laboratory has recently been installed in Cleveland, Ohio.

William O'Neil, president of the General Tire & Rubber Co., Akron, Ohio, was the principal speaker at a meeting on January 11 of General dealers at Hotel Pennsylvania, New York, N. Y.

Victor De Sanctis has been named European export representative of the Goodyear Tire & Rubber Co., Akron, Ohio.

The first transatlantic transaction in crude rubber by radiophone was negotiated yesterday, when F. R. Henderson, of Henderson, Helm & Co., president of the Rubber Exchange of New York, gave an order for fifty tons for February delivery, fifty tons for March delivery and fifty for April delivery to Arthur Jones, chairman of the Rubber Trade Association of London.

H. Muehlstein & Co., Inc., 41 East 42nd street, New York, N. Y., importers of crude and scrap rubber, have opened a crude rubber brokerage department for the convenience of those connected with the rubber industry, whether as importers, manufacturers, or dealers. The Muehlstein organization maintains branches in Chicago, Akron, Boston, Los Angeles, and London, while it is also a member of The Rubber Exchange of New York, Inc., and The Rubber Exchange Clearing House, Inc.

The Kelly-Springfield Tire Co., now at 250 West 57st street, New York, N. Y., will during the latter part of April occupy new quarters in the General Motors Building, Broadway and 57th street, which structure is now approaching completion. The Kelly-Springfield organization has leased the entire tenth floor of the new building.

The American Cyanamid Co., Inc., manufacturer of compounding ingredients for the rubber industry, has removed its offices from 511 Fifth avenue to 535 Fifth avenue, New York, N. Y.

The Bakrow-Leatherow Balloon Co., 14th and Hill streets, Louisville, Kentucky, is to begin operations during March as the Howe-Baumann Rubber Co., New Haven, Connecticut. Walter J. Leatherow heads the organization, which will manufacture toy balloons.

The McCullough Oil Co., Greenville, South Carolina, has established in Greenville a warehouse for the Lee Tire & Rubber Co., Conshohocken, Pennsylvania. Lee products for both the wholesale and retail trade will be handled through this warehouse.

The Carolina Rubber Co., Salisbury, North Carolina, reports very satisfactory business during the past year, and after the deduction of all charges there will be a substantial profit. Sales of Clover Leaf high pressure bus and truck tires have greatly increased, while the production has been enlarged of Carolina Comfort balloons, a low pressure type of tire. C. S. Munro is vice president and general manager.

New Jersey

There has been a decided improvement in all lines of manufactured rubber goods during the past month and New Jersey manufacturers are looking for a busy spring and summer season. Trenton plants are actively producing garden hose for the spring and summer trade which is being stored in warehouses for delivery. The mechanical goods factories are running to capacity. Tire manufacturers are busy but prices are so low there is little profit in the goods. The production of brake lining is very good. Hard rubber goods show a little improvement.

The New Jersey Supreme Court has decided that the City of Trenton, New Jersey, is not responsible for freshets in the Assunpink Creek that frequently cause serious damage at the plant of the Murray Rubber Co., Trenton, New Jersey. The company brought suit to recover $161,018.55 as the result of injury to its property.

Business is improving at the plant of the Ajax Rubber Co., Trenton, New Jersey, and the concern is now operating about 80 per cent after experiencing a dull early winter season.

The Combination Rubber Co., Trenton, New Jersey, announces that orders are becoming plentiful again and the plant is now running with two shifts of tire and tube makers. During the fall and early winter the company was running with one eight-hour shift.

The Murray Rubber Co., Trenton, New Jersey is very busy in the mechanical rubber departments with orders for fire and garden hose for spring delivery.

The Pierce-Roberts Rubber Co., Trenton, New Jersey is very busy turning out mechanical rubber goods and automobile accessories. The company announces that both December and January showed a larger production than the same two months of last season.

At a recent bankruptcy sale in Syracuse, New York, Walter C. A. Henney, of the Equipment Co., Inc., Trenton, New Jersey, purchased the plant and equipment of the SyraCord Tire & Rubber Co. for $105,000. Mr. Henney will dismantle the plant, dispose of the equipment and sell the building.

The Thermoid Rubber Co., Trenton, New Jersey reports that business is improving in all the departments and that prospects are bright for the next few months to come. The concern has increased its output of brake lining.

No cause for action was the verdict rendered by a jury in Mercer Court, Trenton, New Jersey, in the suit of the American Rubber Products Corp., Jersey City, New Jersey, against L. Albert & Son, Trenton, New Jersey, to recover $3,539 damages for alleged defective machinery bought by the Jersey City company.

The Dural Rubber Corp., Flemington, New Jersey, announces that it has increased production of Dural red inner tubes by installing additional equipment. The plant is now operating to capacity. Milton Cohn, former sales manager of the Globe Rubber Tire Manufacturing Co., is now in charge of tube sales.

Massachusetts

Massachusetts rubber factories opened the new year under favorable conditions, and the general level of activity is high. The expected cut in rubber footwear prices materialized January 1, reductions averaging 12½ per cent. First quality men's rubbers which were listed at $1.10 per pair wholesale, are now $1.00 and women's light croquets have been reduced from 81 to 70 cents per pair. On boots and heavy goods the reduction was even more drastic. With the weather conditions unusually favorable for rubber footwear, the dollar volume of sales will not be affected materially, however.

All footwear mills are still running at capacity as the retail trade is absorbing almost the entire production. On men's overshoes there has been a general shortage and the supply of misses' and children's has also been at times insufficient to take care of the demand. Retailers are still buying hand-to-mouth despite the favorable market owing to the novelty overshoe craze. The 1928 line carries a variety of new types of overshoes in colored and fancy fabrics, both in the snap fastener and automatic slide fastener types. How far this millinery vogue in overshoes will go is still uncertain, but it has made the retailer reluctant to stock up on the staple types, as the new styles have not been put into production to any extent as yet. There have been several price revisions in these numbers since the first of the year which has added to the uncertainty of the situation.

After February 1, the rubber tickets on the winter numbers will gradually slacken until April 1, which is inventory period for most of the footwear companies. Tennis production is now being increased, and advance bookings point to a good summer business.

The mechanical goods factories have started to pick up since the first of the year along with renewed demand from the automotive industries. Reclaiming plants are busy with prices somewhat easier.

The Boston Woven Hose & Rubber Co., Cambridge, Massachusetts, made its annual distribution of gold pieces at Christmas time to those of its employes who have been in the firm's service for ten years or over. This year the firm remembered 321 employes whose service records were as follows: for 30 years or over, 43; 25 to 30 years, 23; 20 to 25 years, 59; 15 to 20 years, 83; 10 to 15 years, 113. Those who served 25 years or more were awarded $20; those from 20 to 25 years, $10, and those from 10 to 20 years, $5. George E. Hall, general manager, and J. William Fellows, factory manager, had charge of the distribution which has been an annual custom of the firm for the past ten years.

The Davidson Rubber Co., Charlestown, Massachusetts, resumed operations January 3 after a shutdown for inventory and repairs lasting ten days. Business is now unusually active in the druggists' sundries line following a price reduction January 1, and sales of the Banner line by Davidson have been very heavy since the first of the year.

The Taunton Rubber Co., Taunton, Massachusetts, manufacturer of heels, soles, and sponge rubber specialties, has leased the plant of the Greenfield Tap & Die Co., Taunton, affording additional production space of 50,000 square feet. The new quarters will be used to take up the manufacture of sponge rubber specialties, including some which are now in common use in connection with radio sets. The company is capitalized for $90,000 fully paid in, and additional stock will be issued to increase the capital to $150,000. During the past eight years, sales have increased from $50,000 to $500,000. The company now employs 110 and the officers are William L. Gifford, president, and Joseph L. Gifford, treasurer.

At the annual meeting of the First National Bank of Boston held recently, Homer Gage, of Worcester, vice president of the Hood Rubber Co., was elected a director. Homer Gage is president of the Crompton & Knowles Loom Works of Worcester, Massachusetts. In addition to his position as director of Hood, he is a director in Graton & Knight Manufacturing Co., Merchants National Bank of Worcester, Royal Worcester Corset Co., State Mutual Life Assurance Co. and Worcester Gas Light Co., and trustee of the Worcester County Institution for Savings. Frank B. Hopewell, a director of the Reading Rubber Co., was reelected a director of the First National at the same meeting.

The Monthly Review of the Federal Reserve Bank of Boston shows that wholesale sales of rubber footwear in New England during September, October, and November were larger than during the corresponding periods of either 1924 or 1925. These increases were particularly favorable, the report says, as they occurred during the most active selling season.

The tire and tube production of New England is on the upswing. Converse Tire & Rubber Co. has commenced production on the new line of President and Alpine tires and tubes, and already has broken all production records for the plant. Fisk is now running two shifts with plans being underway to add a third. Hood looks for a record production in their tire division this year. All local companies adjusted prices to meet the recent revision of 5 per cent on tube and some tire sizes.

Salmon Falls Manufacturing Co., Salmon Falls, New Hampshire, manufacturers of tire fabric, closed down permanently on Tuesday, January 11. Though representatives of six or seven different firms have been shown through the plant as prospective buyers, no offer to purchase had yet been received.

Howard L. Whitely, formerly proprietor of Whitely Bleachery and agent of Lowell Bleachery for many years, has been appointed agent of Waltham Bleachery & Dye Works to succeed James A. Walsh, resigned. James W. McQuesten remains assistant agent.

Despite rumors that Manomet Mills of New Bedford, that city's largest cotton yarn producer, is to be dissolved, President William Whitman states that as yet no positive steps looking to liquidation have been taken. The mill is to be closed, however, according to Mr. Whitman, when present orders have been run out. It will take roughly two months to complete orders now on the books. As a manufacturer of cotton yarns and cord tire fabrics, Manomet has felt severely southern competition, in company with all northern spinning enterprises.

The Lowell Equipment Manufacturing Co., manufacturer of vulcanizing equipment for the tire repair trade, reports the outlook for 1927 considerably better than at any time during the last eighteen months. The company has recently brought out some new models of combination high pressure and balloon tire vulcanizers in three cavity type, and has also added a new electrically heated line.

Clifford A. Goodnoh is now the purchasing agent of the Clifton Manufacturing Co., Jamaica Plain, Boston, Massachusetts. Executives of this organization, which specializes in the production of rubberized clothing and proofed goods, include the following:

Frank C. Tenney, president; N. Lincoln Greene, vice president and general manager, and H. G. Morse, treasurer.

The plant of the Stedman Products Co., South Braintree, Massachusetts, is being operated on full schedule; the rubber flooring division being run at capacity with many unfilled orders on hand, while the reclaim department is also busy in the production of well-known brands. Executives of the organization believe that the outlook for 1927 is most favorable.

Edwin H. Marble, president of the Curtis & Marble Machine Co., Worcester, Massachusetts, manufacturer of special types of rubber equipment, has been awarded a fellowship by the Textile Institute, Manchester, England, he being the second American to be thus honored. Mr. Marble is also a member of the executive committee of the Textile Institute Club, recently organized in the United States by the (American) Textile Institute for the purpose of promoting special researches.

Bowling among rubber employes is finding strong favor with the Hood Rubber Co., American Rubber Co., and Revere Rubber Co., who are running tournaments.

Charles M. Speaks has rejoined the Firestone Tire & Rubber Co., Akron, Ohio, and will be connected in an executive capacity with the Firestone Footwear Co., Hudson, Massachusetts.

Boston a Crude Rubber Port

The increasing importance of Boston as a rubber port was emphasized during the week of January 17 to 22 when two steamers, delivering more than $1,500,000 worth of rubber, docked at the Hub port. The *S. S. President Van Buren* unloaded at the Boston tidewater terminal (army base) 5,984 bales of rubber from Singapore for shipment to tire manufacturers in the interior. The *President Van Buren* is a Dollar Line Steamer, one of the round-the-world ships which picks up different cargoes in circling the globe. The *City of Baroda*, an American Manchurian Line steamer, arrived with 984 bales from Singapore for the Fisk Rubber Co., and 7,596 bales for rubber companies in Akron, Ohio.

Figures released by the Maritime Association show that rubber imports through the port of Boston have increased in the last five years as follows: 1920, 1,307 tons; 1921, 2,132 tons; 1922, 8,875 tons; 1923, 14,765 tons; 1924, 15,235 tons; 1925, 16,000 tons. Previous to 1920 rubber shipments through Boston to the mid-western tire manufacturers were almost unknown.

Rhode Island

Reports indicate that the manufacturers of insulated wire and rubber goods in Rhode Island have done a fairly satisfactory business during the past year. The great demand for rubber goods that came early in December has continued through January, giving encouragement to the optimistic feeling that prevails. Wholesalers and jobbers have had a fair year as a whole, influenced in a considerable measure by the hand-to-mouth buying policy, but in general some gain over 1925 has been noted. Manufacturers of rubber and rubber products have a substantial number of orders on hand, and during the past month there has been an appreciable quickening in a number of lines, inventories having apparently been finished in wholesale and retail trade and reorders to complete lines have been received by the manufacturers.

The annual corporation statement of the Revere Rubber Co., Providence, Rhode Island, shows the following:

Assets: merchandise, $796,568; cash, $5,772; accounts receivable, $4,430,199; prepaid accounts, $14,536; furniture, fixtures, tools, etc., $14,659; vehicles, $6,425; total, $5,268,159. Liabilities: capital, $4,500,000; accounts payable, $32,967; surplus, $735,192.

Miss Bride E. Culley voluntarily retired about the middle of January as forewoman at the factory of the National India Rubber Co., Bristol, Rhode Island, after 51 years of service. The employes of one of the departments, over which she had jurisdiction, presented her with a silver fruit basket and the women's making room of the Keds division of the factory presented a substantial purse of gold. Miss Culley entered the factory at the age of 14 in 1876 and worked her way up as forewoman of the men's and women's bench making department with rank of assistant foreman. In 1883 she had the distinction of making the first pair of tennis shoes.

The American Electric Works, Phillipsdale, East Providence, Rhode Island, has under construction two new buildings necessitated by the constant expansion of its business.

Since the destruction of its plant at Franklin, Massachusetts, several weeks ago, representatives of the Appleton Rubber Co., have been inspecting prospective sites in Rhode Island and Massachusetts.

Ohio

Following a general improvement in tire sales, with larger orders from dealers on the spring dating basis since the first of the year, most tire factories in Ohio, which had been running for several months at less than 85 per cent of capacity, started to speed up production about the middle of January, and by the end of the month operations were nearly 90 per cent of capacity. Total output of tires in the Akron district is in excess of 110,000 a day.

Large Akron rubber companies have been purchasing more crude rubber and fabric during the past month than they did a year ago. While many have fabric contracts for a year or more in advance, a good volume of fill-in orders is being placed for immediate or near delivery. This indicates that current needs are greater than was anticipated a few months ago.

With 5,000,000 more motor vehicles operating today than a year ago, and 20,000,000 more tires on the road, the rubber industry in Ohio should experience a prosperous year. Dealer stocks throughout the country are extremely low, and must soon be replenished. Inventories of high priced rubber have been liquidated, and written down to current market values, paving the way for better earnings by the manufacturers in 1927. Authorities agree that tire prices cannot go any lower and probably will go higher this year. There is talk of an upward price revision in the spring. As crude rubber costs are expected to advance, rather than decline, manufacturers will have no more inventory losses to absorb.

Harvey S. Firestone, president of the Firestone company, has predicted that tire sales in 1927 will be at least 10 per cent greater than in the preceding year. Orders for original equipment will be about the same, with substantial gain in replacement business. Other authorities believe there will be a gain of 15 per cent in tire business.

Many rubber companies now are erecting large additions and are spending liberally for new machinery and equipment in anticipation of a big business this year. Construction of new buildings in 1927 will far exceed the amount of factory buildings started last year. All branches of the industry, in fact, should show a substantial improvement. Rubber reclaimers are spending millions of dollars on plant additions and new equipment, preparing for heavy business increases in 1927. Manufacturers of rubber equipment and suppliers of materials agree that the outlook is much brighter at this time than it was a year ago.

The recent cut in prices of bus and truck tires and tubes, averaging about 10 per cent, is considered part of a cooperative movement against the mileage contract evil. If successful the plan will establish this class of business on a profit-making basis. Heretofore manufacturers have been supplying bus tires on a rental basis at a loss. Prices are now adjusted on these large size casings so that dealers can profitably equip vehicles on the straight sale basis in competition with the mileage contract basis. As the demand for

bus tires is growing rapidly, manufacturers recognize that the sooner the mileage contract evil is remedied the better it will be for all concerned.

Production at the Goodyear Akron plant has been increased from about 35,000 tires a day to nearly 40,000. Further gains in output are expected early in February. Plant additions and new machinery will provide for a capacity output later this year of 55,000 tires a day. The new balloon tire has brought increased orders from dealers, and numerous applications have been received from those who have never before handled Goodyear products.

Firestone is manufacturing in the neighborhood of 35,000 tires a day, in addition to a large output of rubber footwear. An $800,000 addition to Plant 2 is under way which will nearly double the capacity for manufacturing small-size tires.

Tire production at Goodrich is a little over 20,000 tires a day. Continued cold weather and snow storms have accelerated the demand for rubber footwear, resulting in full time operations in that department.

Miller is producing over 7,000 tires a day, and large quantities of rubber sundries and novelty goods. General and Seiberling are running better than 85 per cent of capacity.

Employment conditions are beginning to improve as the result of increasing activity. There has been a surplus of workmen for several months, but this is being remedied. It is reported that 2,000 men have been hired by rubber companies within the past few weeks.

M. E. Mason, former vice president and sales manager of the Mohawk Rubber Co., Akron, Ohio, has been elected president of the Star Rubber Co., Akron, Ohio, to succeed L. H. Firey, resigned. Mr. Mason has had 30 years of experience in the rubber business. After serving in executive capacities with Mohawk since 1913, he retired about two years ago.

Goodyear-Zeppelin Corp., Akron, Ohio, subsidiary of the Goodyear Tire & Rubber Co., is preparing bids for one or more rigid airships of 6,000,000 cubic foot gas capacity, authorized by Congress for the U. S. Navy. If the contracts are obtained, a $2,000,000 hangar would probably be constructed in or near the rubber city.

Frank A. Seiberling, president of the Seiberling Rubber Co., Akron, Ohio, believes 1927 will be a year of average profit for the rubber industry. Tire production will approximate 70,000,000 casings, in his opinion. The Seiberling company had the biggest year in its history in 1926, sales being in excess of $17,000,000.

Rumors of a consolidation of several of the smaller rubber companies in the Akron district became so persistent that S. S. Miller, president of the Mohawk Rubber Co., issued a denial that his company was involved in such a movement.

After completing its first full year of operation at Barberton, Ohio, the Akron Rubber Reclaiming Co. has passed its sales goal by a comfortable margin, according to William Welch, general manager. The plant is operating at capacity, with three shifts and is turning out 28 tons of reclaimed rubber a day.

Robert M. Graham has been appointed general factory superintendent of the Star Rubber Co., Akron, Ohio. He is a well known figure in the industry, and has been connected at various times with the Goodyear and Goodrich companies.

After more than thirteen years of service at the Firestone plant, Akron, Ohio, C. D. Close has resigned as office manager. He has purchased a tire service station at Battle Creek, Michigan, to handle Firestone tires.

The Firestone fleet of 21 test cars is now being run in Florida, having left Akron in December. The cars are operated 20 hours a day, the drivers working in shifts. Daily average per car is about 450 miles, or 2,500 miles a week. J. D. Fitzharris is in charge of the testing crew of drivers and mechanics.

William H. Van Horn has joined the advertising department of the Goodyear Tire & Rubber Co., Akron, Ohio.

The new storage and manufacturing addition to the plant of the Ohio Rubber Co., Willoughby, Ohio, will be ready for occupation the first of February. Work has been started on a second building to adjoin the warehouse.

Harvey S. Firestone, Jr., head of the Firestone Plantations Co., returned to Akron early in January after spending several months in Liberia, America's new rubber growing center. With work past the experimental stage, there are now about 200,000 rubber trees yielding 100,000 pounds of rubber monthly, Mr. Firestone reported. Thousands of acres have been cleared and planting started.

George R. Southwood, formerly with The Bridgwater Machine Co. is now in the sales department of the Akron Rubber Mold & Machine Co., Akron, Ohio. Mr. Southwood has been connected with the rubber machinery business for the past twenty years.

George R. Southwood

The Ohio Rubber Engineering Co. has moved into new quarters in the Federal Oil & Gas Company Building, 109 North Union street, Akron, Ohio. M. D. Tremelin is general manager.

The Roessler & Hasslacher Chemical Co., 709 Sixth avenue, New York, N. Y., announces that E. H. Nahm is now representing the service department of the company's rubber division. Mr. Nahm's offices are at 172 Oakdale avenue, Akron, Ohio.

For the past fifteen years the Anderson Rubber Co., Akron, Ohio, has been specializing in the manufacture of toy balloons. Affiliated organizations include: the Western Reserve Rubber Co. and The Novelty Rubber Sales Co.

The Triangle Tire & Rubber Co., Canton, Ohio, reports that its dollar sales in 1926 exceeded those for 1925 by 32 per cent, while the gain in units was about 43 per cent. The company is selling casings in thirty-five states, while warehouse stocks are maintained at San Francisco, Atlanta, Cincinnati, Kansas City, and Oklahoma City. On January 15 the company began the manufacture of inner tubes. M. C. Wyatt is general manager.

The New Jersey Zinc Sales Co., 160 Front street, New York, N. Y., reports that Bruce R. Silver has been appointed district sales manager of the organization, with headquarters in Cleveland, Ohio. Mr. Silver was formerly chief chemist for the Dunlop Tire & Rubber Co., joining the staff of the New Jersey Zinc Co., in 1922.

Bernard A. Young, formerly associated with the Panco Rubber Co., is now in charge of sales for The Lima Cord Sole & Heel Co., Lima, Ohio. J. E. Grosjean is president of the last-mentioned organization.

The Cooper Corp., Cincinnati, Ohio, reports that The West End Auto Sales Co. is now a distributer of Cooper tires and batteries, with offices at 2905 West Third street, Dayton, Ohio. Walter Laing, now in charge of the Cincinnati branch of the Hassler Stabilizer Co., was for ten years manager of the Cincinnati division of The Cooper Corp.

Prospects for the future are most encouraging, according to the Erie Rubber Corp., Sandusky, Ohio, while the company's business has increased 700 per cent in the last three years. Executives include: J. A. Miller, president and treasurer; D. S. Kubie, vice president; R. K. Ramsey, secretary; W. P. Young, auditor; J. M. Dine, general sales manager, and M. B. Haines, superintendent.

Mason Personnel Changes

Important changes in branch personnel of The Mason Tire & Rubber Co., Kent, Ohio, are the following: A. W. Sherlock, formerly Chicago branch manager, is in charge of the new central division, while Harvey B. Stout will direct the new southern

division, created from parts of the former eastern and central division. John McKee, Jr., has been tranferred from the Dallas branch to that at Cleveland, while C. J. Marx, formerly branch manager at Kansas City, will be in charge at Dallas. H. C. Berggren succeeds Mr. Marx at Kansas City, while Fred Wassmuth succeeds Mr. Sherlock as Chicago branch manager. M. P. Van Pelt has been appointed special sales representative of the southern division, while Tony Roche is special representative for the central division. The Mason company has moved one of its branches to 22nd and Reed streets, Portland, Oregon. Carl G. Lufkin is in charge of this division.

General Sales Manager of Firestone

Lee R. Jackson, who for more than fourteen years has been associated in various capacities with The Firestone Tire & Rubber Co., Akron, Ohio, has been appointed general sales manager of the organization. He became a member of the company's sales department in September, 1912, shortly after his graduation from the University of Akron, Akron being his native town.

Lee R. Jackson

Soon after his appointment as office manager of the Atlanta branch, he was promoted to the position of branch manager at Grand Rapids, Michigan, going from there to Indianapolis and later to Minneapolis. After having been made division manager for the Pacific Coast, he had satisfactorily filled his latest position as sales manager in charge of manufacturers' sales, with headquarters at Akron, this immediately preceding his present appointment.

General's Sales Have Increased

General Tire & Rubber Co., Akron, Ohio, reports total sales of $20,100,000 for the year ended November 30, 1926, an increase of $2,000,000 over the previous year. Net profits were only about a third as much as the preceding year, amounting to $709,831, or $7 a share on the common stock, after all charges and dividends. Regular quarterly common dividend of 2 per cent and an extra of 6 per cent were declared. President William O'Neil announced that General is the only large tire company that has not borrowed money or issued new securities in the past year.

"The present year will be better in both sales and profits than the preceding year," commented Mr. O'Neil. "Our business for December was 50 per cent greater than the same month last year. Dealers' stocks of tires are badly depleted and I look for a rush of orders early in the spring. Any price revision to be expected will be upward. Dealers are now buying in quantities such as seem to indicate an increase in production for the present at least."

MIDWESTERN NOTES

The Century Rubber Works, 54th avenue and 18th street, Chicago, Illinois, has completed the construction of a new power house as well as a two-story office building, measuring 50 by 100 feet. The organization has recently enlarged its sales personnel and is now operating ten branches. E. L. Van Buren has been appointed sales manager.

James L. Mayer and Frederick E. Oswald have announced the opening of a sales office for industrial engineering equipment at 332 South LaSalle street, Chicago, Illinois. They are representing the Dings Magnetic Separator Co. and the Saginaw Stamping & Tool Co., Saginaw, Michigan, manufacturers of overhead conveyer wheels, trolleys, casters, etc.

A new and elaborate station for the handling of Lee tires has been opened by the Lee Tire Sales Co., at Fourth and Chestnut streets, Evansville, Indiana. Alvin R. Brown is one of the owners of the new establishment.

The Overland Trail Tire Sales Co. has recently established new headquarters at 2060 Farnam street, Omaha, Nebraska, and is handling the entire wholesale and retail distribution of the products of the Overland Trail Rubber Co. Sales of Pioneer cord tires for 1926 were valued at approximately $3,246,690. F. J. Grace is manager of the sales division.

Edmund C. Prouty, formerly in charge of production at the Morgan & Wright tire factory of the United States Rubber Co., and more recently in charge of their technical service office in New York, is now executive assistant to the vice president in charge of all United States Rubber Co.'s tire factories, with headquarters at Detroit.

Pacific Coast

In the general improvement in trade conditions on the Pacific Coast, as noted in the latest Federal Reserve Board survey, the rubber industry figured as one of the few that had made conspicuous advances. While the progress in rubber lines during the past quarter was not proportionally as much as it had been in the six months preceding, it occasions little surprise. Business conditions are said to be sounder than ever before, and a flood of orders is expected directly after March 1, when inventories will have been taken and state taxing valuations will have been determined. It is claimed that retailers' stocks of rubber goods have never been so low or credit lines as closely drawn, mostly at the desire of retailers. The buying of tires on credit is steadily growing in favor. While not openly disparaged by representatives of the large tire manufacturing concerns, they do not encourage it, preferring to regard it as a middleman's venture.

The winter rains have been unusually heavy over the entire Pacific Coast territory and have been a boon to distributers of rubber clothing and footwear, who have thus been aided by nature in prevailing upon retailers to place a large volume of orders far enough ahead to prevent another sudden depletion of stocks. Tire sales have been somewhat halted by the wet weather, especially in the Northwest, but on the whole they have been excellent. Dealers have been taking advantage of the easy terms offered on spring dating orders, and it is said that the deliveries from factories and branch warehouses in March and April on the Pacific Coast will break all records.

Sales of mechanical rubber goods have been comparatively quiet during the past month except in the Southwest where building operations have been quite brisk. Distributers in San Francisco were much encouraged by the ending on January 15 of the nine months' strike of the building trades. Miscellaneous supplies for factories are reported good, while druggists' sundries orders have been few and light. Factories and branches specializing in heavy hose and various pump rubbers for the oil fields state that demand holds up well and that prospects are very good.

The B. F. Goodrich Rubber Co. has not yet appointed a San Francisco branch manager to fill a vacancy, the Golden Gate territory being temporarily looked after by H. M. Bacon, who was until recently a company executive at Akron and who had been appointed as manager of all the Pacific Coast branches, with headquarters at 650 Second street, San Francisco.

The Thermoid Rubber Co. reports that, despite much competition, its sales of brake linings and other products are steadily mounting. James A. Wheatley, coast manager, with offices at 1263 Mission street, San Francisco, has recently been spending much time in the Southwest, in which section he finds prospects very bright.

One of the most optimistic rubber men on the Pacific Coast is J. B. Brady, general manager of the Pacific Division of the United States Rubber Co. The outlook for sales in this territory are, he says, exceptionally bright, and 1927 is likely to prove the best year experienced. Mr. Brady announces that the principal changes made in the Pacific Coast organization late in 1926 were the promotion of L. M. Simpson from manager of the Salt Lake branch to that of the Portland branch, he being replaced in the Salt Lake management by C. W. Ort, who was manager of the footwear department in San Francisco. On January 1 these changes were made: H. O. Bock, formerly manager of the Los Angeles tire department, was made general assistant to the manager, being replaced by C. H. Webster, Jr., formerly manager of the tire department, Spokane branch; and A. J. Robinson, formerly of the Los Angeles technical service department, was made general assistant in that department.

K. D. Smith, Firestone branch manager in Oakland, recently addressed the Northern California Section, Society Automotive Engineers, in San Francisco, on the problems which tire manufacturers are trying to solve for the benefit of makers and users of motor cars. Uniform inflation of dual tires for trucks and coaches, he pointed out, can be insured only by a radical change in present wheel and valve construction. He illustrated the damage done to duals by running one of them flat, and cited proofs that balloon tires do not increase the use of gasoline and do not puncture as easily as high pressure tires.

Two carloads of Dunlop tires arrived in Portland last month, consigned to the Northwest distributers, the Coast-Inn-Station, of which W. T. Maidment is manager. He reports sales as almost double those of a year ago.

J. F. Cullen, superintendent of engineering, Columbia Tire Corp., Portland, Oregon, has returned from an extensive trip to the East and Midwest on which he inspected several of the larger tire factories with a view to improving the methods and equipment of the Portland factory.

With Jack M. Evans in charge, the United States Rubber Co. last month opened its new sub-branch at 339 North First street, Phoenix, Arizona. It was established in 1911 as a tire station, but now carries a complete line of the company's products.

The American Rubber Manufacturing Co., Oakland, California, is making three more conveyer belts of unusually large size for a lumber manufacturing concern in the Northwest. The first, recently shipped, was 1,300 feet long, 4 feet wide, and ½ inch thick. It required in the making 15,000 pounds of rubber; and the 3,000 yards of belting duck used were made in the California Cotton Mills, East Oakland.

Rubber manufacturers who specialize in making paper manufacturers' rubber coated rolls are much interested in the announcement that the Zellerbach paper interests have bought an extensive site and are planning the construction at Aberdeen, Washington, at a cost of several million dollars, of one of the largest paper mills on the Pacific Coast.

With every department working 24 hours daily taking care of a great number of spring dating orders, the Goodyear Tire & Rubber Co.'s factory in Los Angeles is very busy. Daily production of casings averages well over 7,000, with tubes running even higher. The management states that much relief will be afforded by the new $500,000 production and storage addition, the building of which was scheduled to start February 1. After a lapse of several years, the company reopened its tire repair school, which is conducted after the pattern of the Goodyear repair school in Akron. Goodyear dealers will be taught free, and others will be charged moderately.

L. C. Rockhill, sales manager, and F. K. Espenhain, vice president of the Goodyear Tire & Rubber Co., Akron, Ohio, arrived in Los Angeles January 17 for a conference at the California plant, after which they visited the main Goodyear branches in several Pacific Coast cities.

Joseph Mack, general foreman of the Goodyear plant in Los Angeles, is the third to be selected from the latter plant to go to Sydney, Australia, where the parent Goodyear Company of Akron is about to establish a great rubber factory. Mr. Mack will be in charge of production. He left in January accompanied by A. J. Flay, assistant purchasing agent, and W. R. Urquhart, factory manager.

The Southern California Branch of The B. F. Goodrich Co., Akron, Ohio, has, according to Manager F. L. Hockensmith, been making deliveries on the largest volume of garden hose orders handled by the company in one season. Trade in tires and general mechanicals is also reported as excellent, with an exceptionally good outlook for 1927 throughout.

The Samson Tire & Rubber Co., Compton, California, of which Adolf Schleicher is president, has just completed a $40,000 addition to its plant, rated as one of the fastest growing rubber factories in the West or on the Pacific Coast. The plant is working three shifts a day and is rushed with spring dating and regular orders.

Sixty-five was the January membership roll of the newly formed Southern California Tire Dealers' Association, of which A. H. Rude of Los Angeles is president. The organization is closely affiliated with the Los Angeles Automobile Trades Association, and already has done much to curb the activities of gyp tire dealers.

The West American Rubber Company, 400 Avenue 19, Los Angeles, California, of which Douglas Radford is president, continues to expand its well-equipped plant to meet the demands of a fast-growing business. Besides producing a considerable volume and variety of other rubber goods, it is kept particularly busy making an all-rubber fluid-expanding piston for oil field pumps (U. S. Patent No. 1,577,732, March 23, 1926) and a 2,000-pound tested rotary hose coupling (U. S. Patent No. 1,599,775, September 14, 1926).

According to President Musser of the Eno Rubber Co., the plant at Torrance, California, bought last year from the Hendrie Rubber Co., was never busier, making not only a varied line of staple mechanicals but also a large assortment of rubber specialties, for which the concern has unusual equipment.

An increase in sales during 1926 of 25 per cent as compared with 1925 is reported by Nelson & Price, Inc., 1025 South Flower street, Los Angeles, California, a total for the past year of more than $1,500,000. The organization, which is headed by F. T. Price, handles India pneumatic tires and United States solid tires.

J. K. Hough has been recently appointed sales manager of the Goodyear Tire & Rubber Company of California, Inc., Los Angeles, California, his territory including eleven western states, Alaska, and the Hawaiian Islands. Mr. Hough has been connected with the Goodyear organization for about twelve years, his latest duties having been as manager of tire sales only.

The Triangle Tire Co., established ten years ago in Seattle, Washington, has completed the construction of its new $100,000 building at Eastlake avenue and Stewart street, and with its present facilities is able to carry one of the largest stocks on the Pacific Coast. The company handles Corduroy Sidewall Protection tires exclusively, manufactured by the Corduroy Tire Co., Grand Rapids, Michigan.

The Gates Rubber Co., Denver, Colorado, is erecting a production addition to its plant. It will be two stories high, 80 by 125 feet in size, will be ready March 1, and will cost about $100,000.

ACCORDING TO STATISTICS PREPARED BY THE NATIONAL AUTOMOBILE Chamber of Commerce, the automotive industry eclipsed during the past year all its previous records. Approximately 63,000,000 tires were produced, the wholesale value of motor vehicle tires for replacement reaching the high figure of $775,000,000. Of the rubber imported into the United States during 1926, 83 per cent was consumed by the automobile industry.

Canada

The new year finds nearly all Canadian industries well prepared. The home market has grown during recent years of progress and prosperity. Foreign markets, newly conquered and favorably impressed with Canadian goods, are increasing. The automotive industry looks forward to greater production, built by an increasing and enduring demand. The turnover will be larger all around, but the wise will remember that a peak turnover does not always bring a peak profit.

Lower prices on cotton together with a decline on rubber belting are no doubt responsible for the 10 per cent cut on canvas belting recently effective. Friction tape has been reduced two cents per pound. Many rubber accessories have been materially lowered in price. The price changes in rubber belting and tubing vary according to quality and kind, the former has declined from 10 to 15 per cent, and the latter 10 cents per pound. Prices on water, steam, suction, air drill, and pneumatic hose have been reduced, but garden and agricultural hose prices remain unchanged.

In certain sections of the Dominion heavy snow storms caught retailers with small stocks of overshoes and the wires were kept hot ordering immediate replacements. The increased demand for men's spats or gaiters has created a decided call for rubbers and it now looks as if the gaiter and rubber habit were here to stay.

Rubber men deplore the tendency to cut down merchandise quality. Cheap lines of rubbers were first produced in Canada to compete with low priced imports from the United States. These look the same to the customer as the better article, but do not represent the same value. Many retailers have switched to these lines and ignored the higher grade goods. Those who have studied the situation are convinced that the sale of cheap rubber footwear is no advantage to the manufacturer or retailer and no economy to the wearer. There has been no recent change in the price of overshoes but the impression is that values are at rock bottom and that the next change will be upward.

Quebec Rubber Co., Ltd., Quebec, is manufacturing high pressure cord and balloon tires as well as airless cushion tires. Since the opening of the plant output has increased daily, the capacity being 900 tires and 1,000 tubes per day. Arthur Barbeau is the president; C. C. Laporte, formerly manager of the K. & S. Rubber Co., is Montreal branch manager.

Among recent visitors to the Goodyear factory at New Toronto was Hidetoyo Yoshida who is in charge of the Goodyear department of Mitsuhishi Shji Kaisha, Ltd., Goodyear Japanese distributers at Tokyo. Another overseas visitor was A. A. Austin, manager of the Goodyear branch at Bombay, India.

J. E. Jones, sales manager, mechanical division of the Dunlop Tire & Rubber Goods Co., Ltd., Toronto, made the following comment: The outlook for 1927 is even more favorable than the preceding year, and we confidently anticipate next season will absolutely break all records in the sale of golf supplies.

Ralph W. Ashcroft is now general sales manager of The Northern Rubber Co., Ltd., Guelph, Ontario, manufacturer of tennis shoes and rubber footwear. Mr. Ashcroft will be in charge of the organization's domestic and foreign sales as well as advertising. He was for several years advertising manager of the United States Rubber Co. and its Canadian subsidiaries, the Dominion Rubber Co. and the Columbus Rubber Co., while for twenty-five years he has been associated with the rubber industry both in Canada and the United States as well as abroad.

The Rubberset Co., Ltd., 5 Sullivan street, Toronto, will not move to Gravenhurst until summer. F. L. Hewes, general manager, states that after the transfer is made the company will maintain a warehouse in Toronto and operate daily truck service between the factory at Gravenhurst and the warehouse.

The Maple Leaf Rubber Works, Ltd., Port Dalhousie, Ontario, was closed down recently for a couple of days owing to being flooded.

Business in 1926 with the Guelph Elastic Hosiery Co., Ltd., Guelph, Ontario, has been extremely gratifying, says J. J. Cartledge, manager. "We have had increases over every month of the previous year. Elastic protective equipment, such as knee caps, athletic supporters, elastic anklets, etc., have shown a healthy advance in sales throughout the year."

E. E. Williams, manager of the Ottawa, Ontario, branch of the Dunlop Tire & Rubber Goods Co., Ltd., Toronto, was recently elected a director of the Ottawa 100 Club.

The Halifax, N. S. branch of the Miner Rubber Co., Ltd., has moved into new quarters on the corner of Duke & Granville streets and has fitted up attractive business offices and salesrooms on the ground floor. The manager of the Halifax branch is J. H. Codner, and his district covers the Maritime Provinces, Newfoundland and St. Pierre-Miquelon in the Gulf of St. Lawrence.

Among the rubber firms who are exhibiting at the forthcoming National Motor Show of Eastern Canada, Montreal, are: Aero-Cushion Puncture-Proof Tire Ltd.; Montreal-Locktite Patch Co., Detroit, Michigan; Provincial Rubber Sales Co., Ltd., Montreal (Pennsylvania Vacuum Cup Tires).

The Goodyear Tire & Rubber Co., of Canada Ltd., London, Ontario branch, is now occupying new premises at 539 Richmond street.

Eliminating the Handling Bugaboo

Getting the profit dollar after all the expense dollars have exacted their toll is accomplished not only by economical manufacturing and efficient selling, but by these two combined with a third factor, often neglected, handling the merchandise efficiently from the time it leaves the factory until it reaches the ultimate outlet. Handling, not storage, is the big item of warehouse cost. Particularly is this the case in rubber footwear where outgoing shipments are seasonal, and shipping depots must be equipped to handle peak loads without loss of time.

Gravity Conveyer in a Footwear Factory

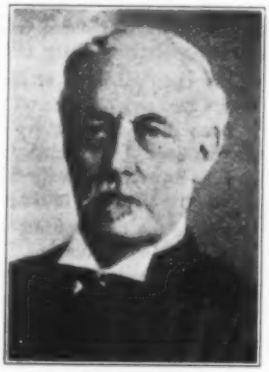
The accompanying illustration shows a spiral conveyer being employed to deliver cases of rubber footwear from storage floors to shipping platform below. Cases are placed in the chute on the various floors and are conveyed by gravity to the assembly point. This type of conveyer is widely used in rubber company warehouses, is very economical of space, and does the work of ten to twenty men using the old fashioned method of carting by truck to elevators with the resultant rehandling.

Examination of a list of installations of this type of conveyer shows over 60 per cent have been made since 1923, indicating that manufacturers are watching handling costs more than ever, and do not hesitate to invest money in this essential equipment when the savings to be made clearly warrant it.

The Obituary Record

Discoverer of Synthetic Rubber

THE death of Sir William Tilden on December 11, 1926, removed from scientific circles a distinguished British chemist who will be remembered as the original discoverer of the synthesis of rubber from isoprene. His right to this distinction was valiantly defended in a lecture on synthetic rubber delivered by Dr. William H. Perkin, professor of chemistry at Victoria University, Manchester, in a lecture before the Congress of Applied Chemistry held in New York City in 1912. Professor Tilden was the first to report the formation of isoprene by the depolymerization of turpentine, but after a number of years of further study he abandoned the subject as commercially impractical.



Sir William Tilden

William Tilden was born in London, August 15, 1842, studied chemistry at the Pharmaceutical Society and the Royal College of Chemistry in London. In 1880 he became professor of chemistry and metallurgy at Mason College, Birmingham, since merged in the University and in 1894 succeeded Sir Edward Thorpe in the Chair of Chemistry in the Royal College of Science, South Kensington. He was knighted in 1909 when he retired from this position.

Among his books on chemical subjects are the following: "Introduction to Chemical Philosophy," 1876; "A Manual of Chemistry," 1896; "Chemical Discovery and Invention in the Twentieth Century," 1917; "Life of Sir William Ramsay," 1918, and "Famous Chemists," 1921. He was married twice, and is survived by his widow and son.

A Veteran Rubber Man

After a six months' illness, the death occurred at Ridgewood, New Jersey, on January 25 of Charles I. E. Mastin, president of La Favorite Rubber Manufacturing Co., Hawthorne, New Jersey, who was also long associated in the management of the Peerless Rubber Manufacturing Co., New Durham, New Jersey.

For thirty-five years Mr. Mastin had been actively engaged in the rubber business, while during this period he was closely associated with one of his friends, the late Edward L. Perry, founder of the Peerless Manufacturing Co., later known as the Peerless Rubber Manufacturing Co. Mr. Perry, the inventor of the famous "Rainbow" packings, had concentrated his energies upon the manufacture of mechanical rubber goods, his great-uncle, Henry Ryder, having acquired the original Goodyear formula for curing rubber with sulphur. Eventually Mr. Mastin became auditor of the Peerless organization and manager of the company's New York City offices.

In 1896 Mr. Perry organized La Favorite Rubber Manufacturing Co., Mr. Mastin being appointed secretary and treasurer. In 1915 the former resigned his duties as president and superintendent in favor of Mr. Mastin, the latter holding the position of president until his death. He is succeeded in the management by his two sons, Charles R. Mastin becoming president, while Theodore Mastin has been appointed treasurer. George Winters, who for twenty-five years has been connected with the organization, becomes secretary and assistant treasurer.

Mr. Mastin's passing is greatly regretted by many friends, to whom he had endeared himself by his many sterling qualities. A deeply religious man, he devoted much time to church work, particularly work with the young. He was also a member of the Masonic order, his affiliations being in New York City.

President of F. A. Cigol Rubber Co.

The death is announced of Frank A. Cigol, president and founder of the F. A. Cigol Rubber Co., Paterson, New Jersey. He was also one of the incorporators of another Paterson organization known as the Cigol Rubber Novelty Manufacturing Co.

Mr. Cigol was born sixty years ago in Soresina, Italy, but for the past thirty years he has been associated with the American rubber industry. He was one of the incorporators and later the factory superintendent of the Laurel Rubber Co., formerly of Passaic, and later of Garfield, New Jersey, while in 1908 he established at Paterson the F. A. Cigol Rubber Co., the latter concern making a specialty of the production of rubber erasers and molded goods. In 1910 and again in 1921 the capital stock of this company was increased, while in 1923 the Cigol Rubber Novelty Manufacturing Co. was organized for the purpose of producing various novelties in rubber, metal, and fabric. Mr. Cigol is survived by his widow and five children.

Resolutions of sympathy and respect were adopted at a recent meeting of the officers and directors of the Italian-American Building & Loan Association of Passaic County, of which organization Mr. Cigol was president.

Prominent British Rubber Manufacturer

On December 22 the death occurred of James Fairclough Moseley, senior director of David Moseley & Sons, Ltd., rubber manufacturers at Ardwick, Manchester. Mr. Moseley had been in failing health for the past three years.

He was born in 1863 and was educated at Harrow and Pembroke, Oxford, receiving from the University his M. A. degree. In 1886 he entered the firm of David Moseley & Sons, Ltd., and soon became a well-known figure in the rubber trade, serving especially on various important committees of the India Rubber Manufacturers' Association. For some years he resided in the United States when the Moseley company was maintaining a factory at Providence, Rhode Island. During the war he took a leading part in Red Cross work, while he had always been keenly interested in civic affairs. He is survived by his widow and three sons, one of whom is connected with the Moseley organization.

Death of Edwin G. Geering

Edwin G. Geering, vice president of the Clyde E. Lowe Co., Cleveland, Ohio, died suddenly on January 24. His obituary and portrait will be published in our next issue.

AMERICAN AND CANADIAN IMPORTS OF GOLF BALLS

During the twelve months ended September 30, 1926, Canada imported from the United Kingdom and the United States, according to the Canadian Department of Trade and Commerce, 47,319 dozen golf balls, having a valuation of $193,352. The total number of golf balls imported into the United States during the first ten months of 1926 numbered 3,209,490, as compared with 2,584,171 in the same period of 1925. The unit value during October, 1926, was 41.7 cents a ball.

The Rubber Industry in Europe

Great Britain

THE past year has been a dark one for English trade in general, mainly because of the coal strike, but with the coming of 1927 conditions began to appear more encouraging. The British steel industry is recovering more rapidly than was formerly believed possible, while an improvement is evident in certain other lines of trade, in which the rubber industry can claim its share.

Tire Price War

The sweeping reduction however in tire prices of approximately 20 per cent as announced by the Michelin organization on December 4 was not particularly welcomed by the British rubber companies, who felt that there was at present no economic justification for such changes. Similar reductions having been made however by Goodyear and Pirelli, the Dunlop and Avon organizations soon followed suit, although the cut in prices made by the two last-mentioned concerns was only 10 per cent as against the 20 per cent of foreign makes. Reductions as of December 9 of 10 per cent were also made by the following British organizations: Palmer Tire Co., Ltd.; Englebert Tires, Ltd.; Fisk; Spencer Moulton; Goodrich and Henley. David Moseley & Sons, Ltd., announced price cuts averaging 20 per cent, their previous reductions having been 20 per cent on July 24 and 15 per cent on October 4. The Miller and Firestone organizations (British) reduced prices 15 and 20 per cent respectively.

Authorities believe that this "tire price war" represents not only a struggle between English and foreign manufacturers but even more a strife for leadership on the part of the various large producers. In commenting on the reduction of North British Clincher tire prices to a figure 5 per cent lower (at wholesale) than that of any foreign tire selling in English markets, Alexander Johnston, managing director of the North British Rubber Co., said in part:

This step has been taken as a means of self-defense in order to prevent our large army of British workpeople from having to go on the dole. Present-day costs in no way justify the action we have taken, but we feel it to be the right thing to supply tires at or below prime cost sooner than create a large amount of unemployment. The quality of the tires will in no way be affected, and there will still be the specific guarantee of 7,000 miles.

New Economic Order Appearing?

The forming of the $40,000,000 rubber purchasing organization by leading American tire and automobile manufacturing interests has called forth many comments, both for and against. In a thoughtful article entitled, "The American Pool: Bluff or Business" *The Rubber Age* (London) says in part:

There is a form of industrial revolution manifesting itself almost daily, the reactions of which on all, whether employers or employed, whether producer or consumer, must be of the very greatest importance. It is the formation, actual or projected, of cartels, combines, trusts and rings, in such vital industries, national and international, as steel, chemicals, shipping, wheat, coal, and others. Whether for good or ill, giant aggregations are coming into being and will constitute in time something of a new economic order. As industrial and commercial conditions grow more complicated minds naturally gravitate to thought of escape from competitive uncertainties to what is hoped will prove the more placid pool. Even in the marketing of coal or pigs it is now seriously suggested that rings or combinations should be created to maintain and stabilize prices, measures which are not, as one commentator asserts, on all fours with the rubber pool, for the simple reason that they aim at protecting the producers. A parallel case would be a combination of rubber growers, to withhold supplies at a price not deemed satisfactory. The best form of all pools would be, as this publication has often suggested, one of producers and manufacturers, based on prices moving within comparatively narrow limits, that should serve both equally well and be fair to the public, whose support is the determining final factor in the success of any industry. A pool on those lines for a period of years would be an ideal form of industrial cooperation and a boon to all concerned. Is it a counsel of perfection?

Institution of the Rubber Industry

On January 28 members of the Institution joined with the London Section in a trip to Paris for the purpose of visiting the International Exhibition. The party left London on the evening of January 28, and were to return the following Monday morning.

The fourth annual dinner of the Manchester Section was held in the Midland Hotel of that city on the evening of January 18. Among those attending were the following: Lord Colwyn, president of the Institution of the Rubber Industry; Sir George Beharrell, chairman of the India Rubber Manufacturers' Association; Sir Stanley Bois, former president of the Institution and ex-chairman of the Rubber Growers' Association; and J. Brotherton, ex-chairman of the Cable Makers' Association.

British Trade Notes

It is planned to hold the British Industries Fair in London and Birmingham from February 21 to March 4, and to make the occasion, notwithstanding recent industrial troubles and business depression, one of greater importance than the fair of last spring. Even though additional space in both cities has been provided, all the exhibiting stands were rented three months in advance of the opening date, conditions similar to the "boom" year of 1920. It is believed that at this year's fair all the displays will be very comprehensive, one of the largest being the section at the White City devoted to toys and games, an industry which has developed rapidly since the war and built up a substantial export trade.

The British Goodrich Rubber Co., Ltd., is increasing its capital by 250,000 common shares, for which the International B. F. Goodrich Co. is subscribing. The proceeds will be used to repay the last-mentioned organization for its loan of £250,000.

At the recent annual meeting of the British Goodyear Rubber Co., Sir Walrond Sinclair stated that notwithstanding economic difficulties, caused by the coal strike chiefly, the company's sales during the past year have been most satisfactory. Business in tires had doubled, while sales of mechanical rubber goods, belting being particularly instanced, had in many instances increased as much as 50 per cent. Foreign business had in general been showing decided improvement.

Charles Macintosh & Co. (South Africa), Ltd., has been established as a private company for the purpose of carrying on in South Africa or elsewhere the manufacturing and handling of india rubber, gutta percha, balata, etc. The company's offices are at 2 Cambridge street, Manchester, England.

A broker's organization has been established under the trade name of Wilson, Smithett & Cope, Ltd., with offices at 39 Mincing Lane, London, E. C. 3. The company will handle crude rubber, gutta percha, caoutchouc, balata, and other products.

R. Black & Co., Ltd., manufacturers of waterproof garments, are now in larger quarters at 69 Chapel street, Manchester. The organization has recently opened London offices at 153 Cheapside.

The Standard Insulator Co., Ltd., has moved its offices to Winsley House, Wells and Oxford streets, London, W. 1.

Germany

A review of the developments during 1926 leads to the fairly general conclusion that while Germany experienced numerous difficulties of many kinds and met with many a disappointment, on the whole an improvement over 1925 was to be noted. It is felt that Germany has emerged from the depression of 1925, that business in all fields shows an upward tendency and a healthier tone. As far as the rubber industry is concerned, definite progress has been made in the direction of organizing production and attempts have also been made at concentration. In connection with the latter, very little has as yet been attained; some old firms have disappeared, but other new ones have taken their place. As for regulation of prices, this does not seem to exist at present.

In almost every branch of the industry the complaint is heard that under-cutting prevails. He who quotes the lowest prices gets the order. And only too often quality suffers. The practice is unfortunately not limited to the smaller firms, for competition from foreign firms, many of which have the advantage of a low rate of exchange on their side, plus unemployment, which again increased during the last months of 1926, make business deals hard to negotiate sometimes even for established firms of repute. Thus though the financial situation is now sounder than it was a year ago, the purchasing power of consumers is as limited as ever and, in addition, taxes continue to be oppressive.

Nevertheless, Germany undoubtedly is on the upward path and the year 1927 is looked forward to with a certain cheerfulness on the whole.

Low Pressure Tires

The *Gummi-Zeitung* in a recent issue publishes the result of an inquiry among representative German tire manufacturers regarding low pressure tires in Germany.

As was seen at the automobile exposition and reported in these columns last month, the low pressure tire appeared on 90 per cent of the cars. New cars in most cases are equipped with balloon tires. On the other hand, it appears that only in exceptional cases have wheels of older types of cars been altered to hold balloon tires. A few tire manufacturers reported that their production of high pressure tires is very limited.

The substitution of low pressure tires for high pressure tires is accompanied by a progressive tendency to standardize tires. This was particularly noticeable at the automobile exposition quoted above. The program for a reduction in the number of tire sizes had fixed 17 different sizes, but at the exposition it was found that this had been improved upon to such an extent that there is a possibility of reducing the number to 10.

At the exposition it was also seen that 65 per cent of tires were the straight-side type and an increase of 20 to 30 per cent is looked for in 1927; when there will be more straight-side tires of small dimensions. Incidentally, the drop center rim is attracting attention here because of the advantages offered for small German cars.

Also the 34 by 7.30 balloon tires for the heaviest trucks are no longer recommended, but the smaller 33 by 6.75 tires.

Racing automobiles continue for the most part to be equipped with high pressure tires, balloon tires being used in exceptional cases, and then are usually inflated to a higher pressure than usual. These tires seem to answer their purpose fully. Efforts are being made by manufacturers to prescribe exclusively straight-side tires for racing purposes and to standardize types.

The information received from the various tire manufacturers leads to the conclusion that the time is not far off when the general type of tire used on passenger cars in Germany will be the straight-side low pressure tire. Opinion as to the felloe is as yet divided though the cheapness and lightness of the drop center rim have impressed two of the biggest German tire concerns which express themselves in favor of it.

Austria

While American exports of rubber shoes to Austria amounted to 224,054 pairs, value $213,167 in 1924, they dropped to 53,181 pairs, value $83,433 in 1925 and during the first eleven months of 1926 again to 32,652 pairs, value $43,781.

The main cause of this decrease is foreign competition, particularly English. It is estimated that the North British Rubber Co., which dominates the local market, sells about 225,000 pairs in Austria and 500,000 pairs through Austria to neighboring countries per annum, while the only Austrian firm manufacturing rubber shoes, the Vereinigte Gummiwaren Fabriken Wimpassing, vorm. Menier J. N. Reithoffer, Wimpassing, sells 125,000 pairs for local consumption and exports 200,000 pairs. Two American firms, five Swedish, two French and one Danish firm, together supply 150,000 pairs for local use and 100,000 pairs for reexport.

The English firm has reached its predominant position by its sales policy. It sells directly to the retail trade through a branch office in Vienna under English management and with factory stocks on hand, which enables it to cut its overhead considerably, thereby permitting it to sell goods worth $1.00 at the factory for $1.08 to $1.10 in Vienna.

The Swedish concern Tretorn is also successful here although its products sell up to 50 per cent higher than the English shoes, but their terms are more liberal (up to 9 months credit to the retailer). The two French firms are not particularly successful.

Among the items on the list of exports and imports for Austria during the second quarter of 1926 may be noted the following:

	Imports Kilos	Exports Kilos
Crude rubber, gutta percha, balata and waste	648,400	125,400
Rubber thread	15,100	8,600
Footwear	15,500	59,200
Heels and soles	5,000	76,500
Hose and packing	15,700	238,700
Tires and tubes	222,100	44,300
Hard rubber and articles thereof	6,300	58,800
Fabric combined with rubber and articles thereof	30,900	42,200

European Trade Notes

In Norway the increasing tendency of manufacturers to supply spares as standard equipment, the longer life of the tire and overstocking by dealers during the third quarter of 1925 are the chief causes of a drop of from 8 to 10 per cent in sales of tires to retailers. In 1925 these were about 45,000, but for 1926, estimates do not go above 40,000. Of these 40,000 casings 65 per cent were of American manufacture and the rest, about 14,000, were European. Dunlop is the strongest European competitor and sold 8,000 to 9,000 against 10,000 in 1925.

After an existence of almost forty years, the organization known as Weise & Co., Rotterdam and Amsterdam, Holland, went into voluntary liquidation on December 31, 1926. A new concern, with a capital of three million guilders, will carry on the business under the trade name of Weise & Co.'s Handel Maatschappij, the former partners of the original organization as well as the staff continuing their activities with the new company, whose specialty is importing and dealing in crude rubber and other overseas produce.

The director of the Vereinigte Berlin-Frankfurter Gummiwarenfabriken, Berlin, Friedrich Hühn, celebrated the 50th year of his connection with this firm on January 6, 1927. Herr Hühn, born in Gelnhausen, connected with the local Frankfurter Gummiwarenfabrik Wendt, Buchholz & Co. in 1876. In 1886 the firm was combined with the Berliner Gummiwarenfabrik A.-G. and the present Vereinigte Berlin-Frankfurter Gummiwarenfabriken was formed. The new firm acquired the rubber factory of Friedrich Hurling, Grottau, Bohemia, in 1892 and Herr Hühn was intrusted with its management. The Grottau branch is especially well-known for the roller covers it produces.

The Rubber Industry in the Far East

Ceylon

THERE has always been a certain section of Ceylon planters that has constantly found fault with restriction and would abolish it at any moment if it could. Recently there has been a rather strong recrudescence of feeling against restriction in the usual quarters and a motion was put forward by Mr. Freeman in the Legislative Council to the effect: "That this council is of opinion that Ceylon should now stand out of rubber restriction, the readjustment of which in the recent instructions of the Secretary of State is uneconomic for Ceylon."

The anti-restrictionists hold for instance that restriction is uneconomic, that the pivotal price should be 1 shilling 3 pence and not 1 shilling 9 pence; that the Dutch are gaining at the cost of the British and are laughing up their sleeves at this British philanthropy; that restriction is particularly bad for Ceylon which can produce at a lower cost than the other producing centers.

After some discussion the motion was voted on and defeated, 14 voting in favor of it, 18 against it, while 3, including the mover of the resolution, declined to vote.

Exports of Rubber and Latex

During the eleven months ended November 30, 1926, Ceylon exported 117,477,324 pounds of rubber against 91,262,747 pounds in the corresponding period of 1925. Of these amounts America took 72,403,468 pounds in 1926 and 60,327,610 pounds in 1925; Great Britain took 36,606,887 pounds against 22,855,114 pounds; France, 1,686,854 pounds against 1,229,377 pounds; Germany, 2,948,731 pounds against 3,684,692 pounds.

Exports of latex were 13,096 gallons for the first eleven months of 1926.

Malaya

A rather pessimistic forecast of production and consumption during 1927 has been published by Messrs. E. A. Barbour, Ltd., Singapore.

The firm had sent out a circular dated February 25, 1926, giving forecasts for the year 1926 which aroused much hostile criticism, but it had justified itself to such an extent that the concern was encouraged to make a forecast for 1927.

Forecast of 1927 Production

The reassessment figures for Malaya have not been published, but will be approximately 325,000 tons; while it is learned on good authority that those for Ceylon will be 75,000 tons, which gives a total of 400,000 tons for Malaya and Ceylon.

It is assumed that world production will easily exceed consumption and that the basic price of 1 shilling 9 pence per pound will not be maintained, therefore the output from the above sources during 1927, instead of being 100,000 tons per quarter, will be:—

Quarter	Percentage	Tons
November-January	80	80,000
February-April	70	70,000
May-July	60	60,000
August-October	60	60,000
Total Ceylon and Malaya		270,000

The official estimate of outputs from the Dutch colonies for 1926 is 125,000 tons from estates, and 72,000 tons native rubber, dry, together 197,000 tons. For 1927, Messrs. E. A. Barbour figure on 120,000 tons for estates and 70,000 tons, dry, for native rubber, total Netherlands East Indies—190,000 tons.

On the basis of the limited statistics available, outputs from all other sources have been estimated as follows:

	Tons
Brazil	26,000
Cochin China	12,000
Sarawak, Borneo, etc.	17,000
India and Burma	17,000
Wild	10,000
Total	82,000

The total world's production then works out as below:

	Tons
Malaya and Ceylon	270,000
Netherlands East Indies	190,000
Other sources	82,000
Total	542,000

Consumption During 1927

The world's production for 1926 is given as 597,000 tons. World's visible stocks, not including afloat, will be 65,000 tons higher at the end of 1926 than at the end of 1925, the increases being as follows:

	Tons
New York	16,000
London	43,000
Singapore and Penang	6,000
Total	65,000

So that consumption for 1926 is about 532,000 tons. For 1927, the estimates for consumption are:

	Tons
America	380,000
United Kingdom	45,000
France	40,000
Germany	25,000
Italy	12,000
Russia	8,000
Other Europe	8,000
Japan	12,000
Canada	30,000
Others	10,000
Total	570,000

ESTIMATED STOCKS JANUARY 1, 1927

	Tons	Tons
United States	67,000	
United Kingdom	50,000	
Singapore and Penang	25,000	
		142,000
Production 1927		542,000
Total available 1927		684,000
Consumption 1927		570,000
Balance stocks end 1927		114,000
Normal stocks allow two months' requirements		100,000
Surplus to requirements 1927		14,000

In conclusion, Messrs. Barbour say:

At the time of writing optimism is still prevalent amongst producers and smaller dealers in Malaya and the farmers are apparently still under the impression that their stocks are worth 1 shilling 9 pence per pound and are holding for this price. How long they will continue to hold remains to be seen, but we are convinced that lower prices are inevitable.

American Rubber Buying Organization

The news that leading American tire and automobile manufacturers had formed a crude rubber buying organization created quite a bit of excitement. Rumors that the concern would maintain the price at a level to prevent an additional ten per cent restriction on February 1 have called forth skeptical comment. F. T. P. Waterhouse of Waterhouse & Co., Ltd., Singapore, is quoted as saying that whatever the real object of the organization might be it certainly was not to maintain prices against further restriction of production.

The *Malayan Tin & Rubber Journal* shares the opinion of Mr. Waterhouse and adds "if the new rubber buying scheme is not a bludgeon deliberately being created to hammer down the price of rubber, it is because our American friends, like Mr. Still and some others, fear the coming of a rubber famine about the end of next year."

The journal then goes on to say that it doubts whether anything like a real rubber famine is likely to take place in the near future and points out that great acreages of rubber have been planted up within the last five years and the crops from these would help to meet the world's increasing demand. It quotes certain statements made by H. W. Roy Bertrand, a well-known Ceylon planter, who recently caused a stir by his report of what he found in Sumatra and Java. Mr. Bertrand declared that native rubber holdings were being rapidly added to year by year and that the output from these holdings and older rubber lands would in a few years' time force prices down to much lower levels than those prevailing today.

Netherlands East Indies

The Department of Agriculture has just issued its annual bulletin covering the main crops exported from the Netherlands East Indies in 1925. From the rather full data published under the head Rubber, the following has been culled:

For 1925, information concerning Hevea plantations was received from 875 estates in the Dutch East Indies as compared with 836 estates the year before. In addition, 17 estates reported plantings along the roads and three reported scattered plantings. Estates under 25 bouws (bouw=1.75 acres), of which eight reported in Java and 41 in the Outer Possessions, are not included in the above.

Of the 875 estates, 484 are in Java and 391 in the Outer Possessions, the number in bearing being given at 432 and 352 respectively, together 784. A number of estates have their rubber interplanted with other crops, generally catch crops. Of these, the majority, 227, are in Java, 44 are in Sumatra and 11 elsewhere. Besides this, 156 estates (103 in Java, 37 in Sumatra and 16 elsewhere) also plant other crops on separate blocks of land besides rubber, so that the total number of estates on which no other crop but rubber is exploited comes to 437, of which 154 are in Java, 221 in Sumatra and 62 elsewhere in the Dutch East Indies. The combination most favored is coffee and Hevea; tea and Hevea are found together in Western Java almost exclusively.

Rubber Acreages

The total area of the rubber estates in the entire Dutch East Indies comes to 3,770,000 acres, 1,790,000 acres being in Java, 1,800,000 acres in Sumatra and 181,500 acres in the other Outer Possessions. The total planted area is 33.1 per cent of the estate area and the total area under rubber is 27.2 per cent or 1,025,000 acres, 445,500 acres being in Java and 551,700 acres in Sumatra. This leaves a total unplanted area of 2,524,000 acres of which 1,167,000 acres are in Java and 1,210,000 acres in Sumatra.

Reserve Lands

The reserve rubber lands, therefore, are quite extensive, particularly in Sumatra. In Java this is much smaller, except in the former Batavia district. It is a fact that only 21 per cent of the total area in the latter district is planted up at all that brings Java's figure so near to that of Sumatra. When the Batavia district is excluded, it is found that over 66 per cent of the estate areas are in cultivation, over 48 per cent being under rubber.

It is worthy of note, that both in Java and Sumatra the Hevea plantations are concentrated in certain districts. Thus, while Java's total area under rubber is 445,500 acres, 202,400 acres are in Western Java and 192,000 acres are in Eastern Java; again in Sumatra, 466,700 acres of the total rubber area, 551,700 acres, are in East Coast of Sumatra and Atjeh. In other words almost 84 per cent of the total rubber acreage is to be found in the three centers named above, while East Coast of Sumatra and Atjeh are more important than all Java.

Mature Area and Output

The total area that has reached the bearing stage is 751,900 acres, of which 318,700 acres are in Java and 433,000 acres are in the Outer Possessions (331,300 acres in East Coast of Sumatra alone).

Latest estimates of the outputs of estate rubber in 1926 put the total at 124,037 metric tons, 51,770 tons being contributed by Java and 72,267 tons by the Outer Possessions. The estimate of native rubber outputs for 1926, after making allowances for moisture and dirt, is 72-73,000 tons against 87,987 tons in 1925.

The total output for the Dutch East Indies for 1926 is placed around 197,000 tons of dry rubber against 194,034 tons in 1925.

Permits Granted to Remilling Factories

Requests for permits to erect and operate remilling factories continue to come in in large numbers. The district authorities at Banjermassin alone report ten such requests from individuals and firms to erect factories there with a total annual capacity of 20,000 tons of dry rubber.

Meanwhile permission has been given to the following firms to establish factories in Palembang, subject to certain conditions fixed in the Rubber Remilling Ordinance: (1) N. V. Iternationaal Crediet- en Handelsvereeniging Rotterdam; (2) N. V. Sumatra Industrie en Handel Maatschappij; (3) Moluksche Handelsvennootschap, established in Amsterdam, Holland; (4) Firestone Tire & Rubber Co., Inc.; (5) N. V. Nederlandsche Rubber Unie; (6) Ong Boen Tjit; (7) N. V. Sumatra Landsyndicaat, established in Batavia, Java.

In connection with the limited amounts of rubber available in that district and prior rights of others, permission has not been granted to the Borneo Co., Limited.

Latex Preserved Fruits

In the *Algemeen Landbouw-Weekblad voor Nederlandsch-Indië*, J. G. Fol publishes some results of recent tests carried out to determine whether treating fruits with latex according to the Cramer method aided materially in increasing their keeping qualities.

The tests were made with ordinary ammoniated latex and also with the same latex concentrated by the Traube method until it had a rubber content of 53.3 per cent. This was thought advisable, because the film formed around fruits by dipping in the usual latex was found to be too delicate whereas that formed from concentrated latex was tougher and could easily be peeled from the fruit without tearing.

Among the fruits tested were various kinds of grapes, pears, apples and tomatoes, treated before they were quite ripe. With regard to grapes, it was found that while the latex prevented drying up to a fair extent, not much can be expected from the treatment as yet, chiefly because the grapes thereby lose much in appearance. The delicate bloom disappears entirely and the grapes acquire a very high gloss as though they had been varnished; in addition treated grapes do not become as sweet as untreated fruit.

The treatment prevented the pears from drying up and becoming wrinkled but at the same time the ripening process was retarded. Ripe apples that had been treated remained in a good condition for eight months, whereas untreated apples were totally unfit for trade after three months.

While the latex treatment prevents apples and pears from becoming ripe, it does not have the same effect on tomatoes. Tests show that green to light-red tomatoes treated with latex ripened properly and remain in a good condition for three weeks. After this time the preservative effect of the latex coating becomes less noticeable.

Rubber Patents, Trade Marks and Designs

United States

December 14, 1926*

1,610,238 Cushion tire. Thomas J. Benson, Melcher, Iowa.
1,610,263 Animate figure for raincoats. Morris Cooper, New York, N. Y.
1,610,267 Cushion tire. George W. Denton, South Bend, assignor of one-half to Jefferson J. Young, Mishawaka, both in Indiana.
1,610,299 Truss. Verner A. Longaker, Boston, Massachusetts.
1,610,319 Heel. Eugene J. Ray, Beverly, Massachusetts, assignor to United Shoe Machinery Corporation, Paterson, New Jersey.
1,610,324 Exercising device. William J. Roche and Howard L. Moore, Cochranton, Pennsylvania.
1,610,452 Pneumatic tire safety signal. John E. Kennedy, Los Angeles, California.
1,610,554 Automobile door buffer. Hans G. Jorgensen, Erie, Pennsylvania.
1,610,652 Flower pot holder employing rubber. Louis O. Bouchard, Philadelphia, Pennsylvania.
1,610,712 Throat bag. Maximilian Charles Schweinert, New York, N. Y.
1,610,723 Tire deflation alarm mechanism. Seymour W. Waterhouse, San Francisco, and Enos H. Johnson, Los Angeles, both in California.
1,610,793 Respirator. Lee Kaufman, Brooklyn, New York.
1,610,898 Pneumatic mattress. Cleveland R. Steiner, Springfield Township Summit County, Ohio.
1,611,014 Cord terminal. Walter A. Frantz, Cleveland, Ohio.
1,611,024 Heel and sole. Ignatius B. Grimaldi, assignor by direct and mesne assignments of one-eighth to Lorenzo Falcetta, both of Brooklyn, New York, and one-eighth to Vincent Perrone.
1,611,132 Cushion tire. Charles M. Manly, Kew Gardens, assignor to O. & W. Co., New York, both in New York.
1,611,142 Cushioned sole. James E. Grosjean, assignor to The Lima Cord Sole & Heel Co., both of Lima, Ohio.
1,611,144 Bead for pneumatic tire and reenforcement therefor. Arthur C. Hopkins, assignor to National Standard Co., both of Niles, Michigan.
1,611,145 Reenforcing element for pneumatic tire beads. Arthur C. Hopkins, assignor to National Standard Co., both of Niles, Michigan.
1,611,146 Bead for pneumatic tires and reenforcing element therefor. Arthur C. Hopkins, assignor to National Standard Co., both of Niles, Michigan.
1,611,147 Reenforcing element for pneumatic tire beads. Arthur C. Hopkins, assignor to National Standard Co., both of Niles, Michigan.

December 21, 1926*

1,611,427 Sleeve to aid natation. George Evans, Redondo Beach, California
1,611,546 Bathing cap. Seth R. Milbury, Irvington, New Jersey.

December 28, 1926*

1,612,003 Gaiter. Corinne Dozois, Ottawa, Ontario, Canada.
1,612,024 Belt. Joe Jacobs, Denver, Colorado.
1,612,121 Abdominal supporter and girdle. Carl H. Hittenberger, San Francisco, California.
1,612,182 Ball bearing tire. Michael J. Duffy, Brooklyn, New York.
1,612,199 Combined sole and heel. Faggio Martino, Perris, California.
1,612,200 Game table cushion. Jesse D. Matteson, Muskegon, Michigan, assignor to The Brunswick-Balke-Collender Co., Wilmington, Delaware.
1,612,257 Automobile molding and packing strip. Walter M. Bowen, Buffalo, New York
1,612,294 Cushion tire and rim. Nicholas B. Krepokavich, Hamton Saskatchevan, Canada.
1,612,575 Inner tube. Robert O. Goldthread, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.
1,612,601 Pneumatic tire protector. Genaro Bayona, San Diego, California.
1,612,602 Bandeau for shampoo purposes. Ellen Hartman Bowman, Upper Darby, Pennsylvania.
1,612,643 Balloon toy. James F. Mulholland, Columbus, Ohio.
1,612,788 Tire flap. Joseph Walten, assignor to William McCollum, both of Rahway, New Jersey.

January 4, 1927*

1,612,796 Punching bag. George W. Abraham, Detroit, Michigan.
1,612,822 Hand covering. Paul A. Jones, Jacksonville, Illinois.
1,612,913 Automobile washing device. John Gerken, Jamaica, New York.
1,612,922 Tire bead reenforcing element. Arthur C. Hopkins, assignor to National Standard Co., both of Niles, Michigan.
1,612,983 Hair curler. Anna O'Brien, New York, N. Y.
1,613,089 Inner tube. George H. Ellinwood, Milwaukee, Wisconsin, assignor by mesne assignments to Fisk Rubber Co., Chicopee Falls, Massachusetts.
1,613,096 Cushion heel. John B. Hadaway, Swampscott, Massachusetts, assignor to United Shoe Machinery Corporation, Paterson, New Jersey.
1,613,372 Pocket billiard ball rack. Charles P. Barker, assignor by mesne assignments to Brunswick-Balke-Collender Co., both of Chicago, Illinois.
1,613,413 Garter. Morris M. Scheinberg, Brooklyn, assignor to Henry and Morris M. Scheinberg, copartners doing business as Sturm & Scheinberg, New York, N. Y.

*Under Rule No. 167 of the United States Patent Office, the issue closes weekly on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter.

January 11, 1927*

1,613,677 Inflatable ball. John T. Riddell, Evanston, Illinois.
1,613,784 Legging. John R. Bingaman and William Renno Nagle, Reading, Pennsylvania.
1,613,799 Hose supporter. David A. Lederer, New Haven, Connecticut.
1,614,205 Tire bead cable. Alphonso Comstock Pratt, Deep River, Connecticut, assignor by mesne assignments to American Chain Co., Inc., a corporation of New York.
1,614,239 Sanitary belt. Myron B. Hammond, assignor to Thomas P. Taylor Co., both of Bridgeport, Connecticut.
1,614,286 Pneumatic tire. Julien F. Cullen, Portland, Oregon, assignor to Columbia Tire Corporation, a corporation of Oregon.
1,614,307 Tire inflating coupling and gage. Henry Phillip Kraft, Ridgewood, New Jersey; Edgar J. Phillips and Earl A. Darr, executors of said Henry P. Kraft, deceased.

Dominion of Canada

December 7, 1926

266,396 Vehicle wheel. Harry Nelson Atwood, Monson, Massachusetts, U. S. A.
266,397 Vehicle wheel. Harry Nelson Atwood, Monson, Massachusetts, U. S. A.
266,398 Vehicle wheel. Harry Nelson Atwood, Monson, Massachusetts, U. S. A.
266,425 Corset. Camille Edouard Grenier, Montreal, Quebec.
266,437 Printing surface. Carl Jaek, Altona-Ottensen, Germany.
266,462 Garter. Charles B. Namiot, New York, N. Y., U. S. A.

December 14, 1926

266,709 Multiple fastening device. The Canadian Consolidated Rubber Co., Ltd., Montreal, Quebec, assignee of Ernest Hopkinson, New York, N. Y., and Daniel Francis Dalton, Waterbury, Connecticut, both in U. S. A.
266,753 Draft preventing mat. Edward E. Richardson, Maumee, and Francis O. Richey, Lakewood, assignee of fifty-one one-hundreths of the interest, both in Ohio, U. S. A.
266,754 No-draft mat. Edward E. Richardson, Maumee, and Francis O. Richey, Lakewood, assignee of fifty-one one-hundredths of the interest, both in Ohio, U. S. A.
266,755 Draft preventor. Edward E. Richardson, Maumee, and Francis O. Richey, Lakewood, assignee of fifty-one one-hundredths of the interest, both in Ohio, U. S. A.

December 21, 1926

266,783 Automobile bumper. Everett Jasheway and Henry Duemler, Vails Mills, New York, U. S. A.
266,950 Ankle reducer. The I. B. Kleinert Rubber Co., assignee of Victor Guinzburg, both of New York, N. Y., U. S. A.

December 28, 1926

267,068 Baseball pitching guide. John W. Rovane, Keokuk, Iowa, U. S. A.
267,098 Bowling alley pin spot. The Brunswick-Balke-Collender Co., Wilmington, Delaware, assignee of Joseph W. Bishop, Muskegon, Michigan, both in U. S. A.
267,099 Bowling alley pin spot. The Brunswick-Balke-Collender Co., Wilmington, Delaware, assignee of Joseph W. Bishop, Muskegon, Michigan, both in U. S. A.
267,118 Tire tube. The Goodyear Tire & Rubber Co., assignee of Burgess Darrow, both of Akron, Ohio, U. S. A.
267,158 Pneumatic tire valve inside. A. Schrader's Son, Inc., New York, N. Y., assignee of Julius Volckhausen, Weehawken, New Jersey, both in U. S. A.

January 4, 1927

267,271 Sole and heel. George Smith, Islington, London, England.
267,312 Tennis ball. The Dunlop Rubber Co., Ltd., Regent's Park County of London, assignee of Albert Ernest Penfold, Birmingham, County of Warwick, both in England.
267,315 Separable fastener. The Firestone Tire & Rubber Co., assignee of William C. Stevens, both of Akron, Ohio, U. S. A.
267,325 Overshoe. The Kaufman Rubber Co., Ltd., assignee of Ward E. Roedding, both of Kitchener, Ontario.

United Kingdom

December 1, 1926

259,326 Stethoscope. E. McCann, 8, Trevanion Road, West Kensington, London.
259,339 Block tires. J. and G. C. Miller, trading as J. Miller & Sons, 26, Higher Eanam, Blackburn.
259,358 Spring wheels. A. W. H. Vivian, 60, Braxted Park, Streatham, London.
259,374 Stringed musical instrument. J. M. Mamelok, 35, Oxford Road, Manchester, and C. W. Newsholme, The Grange, Duchy avenue, Fulwood, Preston, Lancashire.
259,415 Tire air tubes and chambers. J. R. O'Brien, 38, Morgan street, Marrickville, near Sydney, Australia.
259,425 Bunion appliance, foot arch supports. F. G. Page, 6, Lyndhurst Road, Hampstead, London.

Chemical patents will be found on page 265. Machinery and Process Patents on pages 268-269.

259,440 Dentures. J. A. Daly, 219 North avenue, New Rochelle, and Gold Sealed Denture Process Co., Inc., Grand Central Terminal, both in New York, U. S. A.
259,482 Top boots. G. E. Haldinstein, trading as Haldinstein & Sons, Queen street, Norwich, Norfolk.

December 8, 1926

259,535† Diaphragm for acoustic instruments. Brandes Laboratories, Inc., 200 Mt. Pleasant avenue, Newark, New Jersey, assignee of Le R. W. Staunton, 125 23rd street, Jackson Heights, New York, and C. A. Brigham, 382 Park avenue, East Orange, New Jersey, all in U. S. A.
259,540† Tire fabric. Hartford Rubber Works Co., 691 Park street, assignee of H. V. Lough, 218 Grandview Terrace, both in Hartford, Connecticut, U. S. A.
259,542† Membranes and diaphragms for filters, electrolytic apparatus, etc. H. Beckmann, 26 Albertinenstrasse, Zehlendorf, Berlin, Germany.
259,644 Twin tire fitment. E. B. Killen, 27, Queen Victoria street, London.
259,665 Pipe with rubber bag. G. Vianini, 229, Corso Vittoria Emmanuele, Rome, Italy.
259,673 Electric inductances. C. F. Halsall, 110, Wilton Road, Pimlico, London.
259,752 Foot appliance. G. C. Goodhart, Willows, Inkpen, Berkshire.
259,771 Batting glove employing rubber. W. Sykes, Ltd., and H. O. Sykes, Yorkshire Athletic Goods Manufactory, Westfield Road, Horbury, Yorkshire.
259,796 Lantern screen. A. Kelly, 57, Chancery Lane, London.
259,819 Elastic fabrics. P. A. H. Tilliard, 8 Rue du Sentier, Paris, France.
259,848 Springs. Ringfeder Ges., Uerdingen-on-Rhine, Germany.

December 15, 1926

259,897† Stoppers. F. Carl, 56 Cottastrasse, Stuttgart, Germany.
260,040 Multiple tire fitment. E. B. Killen, 27, Queen Victoria street, London.
260,095 Draught and dust excluder. W. T. Robertshaw, Climax Works, Churnet street, Rochdale road, Manchester.
260,115 Elastic tubes for windows and doors to prevent rattling and slamming. W. R. K. Gandell, 7, Pembroke Studios, Pembroke Gardens, Kensington, London.
260,145 Buffers. A. F. Herbert, 6, West Smithfield, London.
260,172 Rollers. S. Percival, 40, Chancery Lane, London (Etablissements Benninger Soc. Anon., 111 Geschaftsstrasse Uzwil, Switzerland.

December 22, 1926

260,230† Loud speaker diaphragm. Naamlooze Vennootschap Philips' Gloeilampenfabrieken, 6 Emmasingel Eindhoven, Holland.
260,264† Garters. W. Königsberger, 11 Blücherstrasse, Berlin, Germany.
260,284† Screw jack having rubber pad. J. Klee and A. Schneider, 54 Türkenstrasse, Munich, Germany.
260,336 Boot sole. British United Shoe Machinery Co., Ltd., Union Works, Belgrave Road, Leicester (United Shoe Machinery Corporation, 205 Lincoln street, Boston, Massachusetts, U. S. A.).
260,385 Mudguards. F. P. O'Brien, 15, Josephine avenue, North Circular Road, Dublin, Ireland.
260,403 Ladder shoes. R. E. Irving, 48, St. Albans, Everton, Liverpool.
260,433 Hoods having rubber strips. Standard Motor Co., Ltd., and R. W. Maudslay, Standard Motor Works, Canley, Coventry.
260,528 Head rest. A. Sauer, Schonau, Katzbach, Germany.
260,531 Overshoe. P. E. Tartavel, 35 Rue Crillon, Lyon, France.
260,533 Sweat bands. K. Börsig, 40 Wilhelmstrasse, Konstanz, Germany.

December 30, 1926

260,657 Stocking or heel shield. F. Hayes, The Croft, Swallowfield, Reading.
260,763 Brushes. A. C. and A. S. Leng, trading as C. H. Leng & Sons, Stronghold Works, Sherbourne Road, Balsall Heath, Birmingham.
260,786 Electric conductor. C. J. Beaver, Bell Place, Stamford Road, Bowden, Cheshire, and W. T. Glover & Co., Ltd., Trafford Park, Manchester.
260,794 Pump connecters. G. A. Evans, and R. A. Fletcher, 156, Warstone Lane, Birmingham.
260,798 Hat machine roller. G. Atherton, Virginia Mills, Stockport, Cheshire.
260,837 Electric conductor. Liverpool Electric Cable Co., Ltd., and T. H. Tweedle, Linacre Lane, Bootle, Liverpool.
260,854 Identification devices. L. Herz, 6 Am Zirkus, Berlin, Germany.
260,904 Elastic fabric. G. & C. Ansonia Co., and G. E. Clauss, Ansonia, Connecticut, U. S. A.
260,910 Bottle stoppers. R. Haddan, 31, Bedford street, Strand, London (C. W. Meinecke, East Orange, New Jersey, U. S. A.).

†Not yet accepted.

New Zealand

November 4, 1926

56,480 Tennis racket protector. Frederick George Collis, 6 Southwark street, Southwark, London, England.

December 2, 1926

57,358 Door buffer. George Washington Pirrie Johnston, Coldblow, Cheam, Surrey, England.

Germany

438,368 **Inflatable swimming-tube. Franz Streit, Vikarienweg 6, Hamburg.**
438,471 Submarine cable with insulation of synthetic rubber. **Firma Felten & Guilleaume Carlswerk A.-G., Köln-Mülheim.**
438,534 Apparatus for physical exercises constructed from a rubber tube which serves as stretcher. **Bruno Neumann, Baldurstrasse 17, Nürnberg.**
438,552 **Insulating material made of foam rubber. Herman Pfleumer,** Robert Diezstrasse 4, Dresden-Lorchwitz.

Trade Marks

United States

Two Kinds of Trade Marks Now Being Registered

Under the rules of the United States Patent Office, trade marks registered under the Act of February 20, 1905, are, in general, fanciful and arbitrary marks, while those registered under the Act of March 19, 1920, Section 1 (b), are non-technical, that is, marks consisting of descriptive or geographical matter or mere surnames. To be registered under the later act, trade marks must have been used for not less than one year. Marks registered under this act are being published for the first time when registered, any opposition taking the form of an application for cancellation.

December 14, 1926, Act of February 20, 1905

221,850 DRYFLEX—boots and shoes. The Excelsior Shoe Co., Portsmouth, Ohio.
221,867 Representation of a horse on which are superimposed the words: DOBYNS FOOTWEAR—shoes and slippers. Dobyns' Footwear, Inc., Long Beach, California.
221,908 AGERITE—chemicals more particularly chemicals adapted to retard deterioration of rubber compounds. The B. F. Goodrich Co., New York, N. Y.

December 14, 1926, Act of March 19, 1920

221,928 BELMONT—boots, shoes and overshoes. Hood Rubber Co., Watertown, Massachusetts.
221,929 YORK—boots, shoes and overshoes. Hood Rubber Co., Watertown, Massachusetts.
221,970 "ARCH TRIUMPH, TREAT FOR THE FEET"—corrective apparatus for a leg and foot developer. John J. Cooper, New York, N. Y.
221,977 CLYDE—boots, shoes and overshoes. Hood Rubber Co., Watertown, Massachusetts.
221,978 HY-GRADE—erasers, etc. Snowden Parlette, Oklahoma City, Oklahoma.

December 21, 1926, Act of February 20, 1905

221,998 1788—rubber and fibrous belting and hose. The B. F. Goodrich Co., New York, N. Y.

December 28, 1926, Act of February 20, 1905

222,297 Representation of a patch and the words: "RUBBER-WELD"—tire patches. Rubber-Weld Sales Co., Cambridge, Massachusetts.
222,305 CHARTER—tires and inner tubes. The Gates Rubber Co., Denver, Colorado.
222,309 Representation of two golf sticks enclosing the words: SURE STANCE—shoes, rubbers, overshoes, galoshes, moccasins, gymnasium shoes, etc. Richard & Brennan Co., Randolph, Massachusetts.
222,345 Representation of a tire tread containing the words: CRACKER JACK—tires. Kaufmann Department Stores, Inc., Pittsburgh, Pennsylvania.

January 4, 1927, Act of February 20, 1905

222,411 MASTERPED—leather, rubber, fabric, etc., shoes. Peter Pan Shoe Store, Brooklyn, N. Y.
222,515 OLD HICKORY—tire patches, patching outfits and blowout boots. New York Auto & Radio Supply Co., Chicago, Illinois.
222,581 OUR GANG—shoes of leather, rubber, fabric, etc. Harry Eby Shoe Co., Inc., Ephrata Borough, Pennsylvania.
222,588 WEDFORD—pneumatic tire valve cores. The Wedler-Shuford Co., St. Louis, Missouri.
222,605 The word: "FINCHLEY" above which is a shield containing the representation of a lion's head—rubber and leather shoes, etc. Finchley, Inc., New York, N. Y.
222,656 Representation of a mountain peak above which are the words: "RAINIER BRAND," and beneath the representation the words: "THE PEAK OF PERFECTION" and a shield containing the words: FEN CO.—suspenders, brassières, garters, etc. Puget Sound Notion Co., Inc., Seattle, Washington.
222,696 Representation of a shock absorber across the front of which are superimposed the words: "LEWIS RUBBER SHOCK ERASER"—suspension spring checking device. The Lewis Rubber Snubber Co., Inc., Portland, Oregon.
222,708 Fanciful half-circle containing the word: "SIMPLEX"—ink pads, rubber stamp ink, etc. Office Specialties Co., Los Angeles, California.

January 4, 1927, Act of March 19, 1920

222,712 AERTITE—tough rubbery coating compositions for boiler settings. Johns-Manville, Inc., New York, N. Y.
222,718 CHANDLER BOOT SHOPS—shoes of leather, rubber, fabric, etc. Chandler Boot Shops, Atlanta, Georgia, New Orleans, Louisiana, Birmingham, Alabama, Nashville and Memphis, Tennessee, and Louisville, Kentucky.

January 11, 1927, Act of February 20, 1905

222,784 STURDIARCH—shoes of leather, canvas, rubber, etc. London Shoe Co., Inc., New York, N. Y.
222,797 The word: "WHIZ" in white letters above a triangular device having rounded corners, the inner part of the triangle being yellow with an outer band of red, the whole appearing on a blue background having a band of red at its upper and lower edge—rubber, fabric, etc., adhesive, patching and repairing outfits; cement and glue for rubber, paper, china, etc. The R. M. Hollingshead Co., Camden, New Jersey.
222,863 HIGH FLEX—belting, dredging sleeves and hose. The B. F. Goodrich Co., New York, N. Y.
222,899 HYCOR—clutch facings and linings. The Manhattan Rubber Manufacing Co., Passaic, New Jersey.
222,907 TORPEDO FLOAT—inflatable swimming devices. The Airubber Corporation Co., Chicago, Illinois.
222,911 Circle containing the representation of a ship with the word: "AIRUBBER" superimposed on the sail—inflatable swimming devices. Airubber Corporation, Chicago, Illinois.

222,988 KANTHURT—rubber, leather and canvas belting. The Fisher Leather Belting Co., Inc., Philadelphia, Pennsylvania.
223,003 THE SIREN—golf balls. Edward E. Marshall, doing business as Hurtingdon Manufacturing Co., Meadowbrook, Pennsylvania.
223,012 BORETTE—hard rubber combs. George R. Gibson Co., New York, N. Y.

January 11, 1927, Act of March 19, 1920

223,058 PRINCETON—tires. Princeton Tire & Rubber Co., Trenton, New Jersey.
223,059 STURDY—tire tubes. Princeton Tire & Rubber Co., doing business as Sturdy Tire & Rubber Co., Trenton, New Jersey.
223,060 STURDY—tires. Princeton Tire & Rubber Co., Trenton, New Jersey.

Dominion of Canada

Registered

December 7, 1926

40,814 Word: "PONTIAC"—automobile accessories. General Motors Corporation, Detroit, Michigan, U. S. A.
40,816 Word: "CORMORANT"—raincoats, etc. John W. Peck & Co., Ltd., Vancouver, British Columbia.
40,817 Approximately L-shaped figure, the outer and inner edges of which are formed each by a pair of closely separated parallel lines with the body of the figure between said pairs of parallel lines suitably shaded—rubber heels. United Shoe Machinery Company of Canada, Ltd., Montreal, Quebec.

December 14, 1926

40,885 Word: "SKELFIE"—golf balls, clubs, etc. Donaldson Manufacturing Co., Ltd., 1A Blythswood Square, Glasgow, Scotland.

December 21, 1926

40,919 Word: "PHILLIPS"—rubber plates or pads for attachment to the soles or heels of boots and shoes, also rubber solution. Phillips' Patents, Ltd., 142 to 146 Old Street, London, E. C. 1, England.

United Kingdom

December 1, 1926

472,709 Representation of a target, on one side of the representation the word: "Tar," and on the other side the word: "GET"—boots, shoes, slippers, overshoes and galoshes. The Liverpool Rubber Co., Ltd., Walton Works, 176-178 Rice Lane, Liverpool.
472,799 Representation of a deer, above the representation the words: "SPRINGBOK BRAND"—tires. J. W. & T. Connolly, Ltd., 57-67 Wharfdale Road, King's Cross, London, N. 1.
474,160 MARNATOR—teats for feeding bottles and baby soothers. S. Maw, Son & Sons, Ltd., 7-12, Aldersgate street, London, E. C. 1.
474,328 BYCOL—braces, etc. Alexander Leinster, trading as Leinster Brothers & Staveacre, Belle Vue Factory, Belle Vue avenue, Londonderry, Ireland.

December 8, 1926

473,009 STRIPPIT—all goods included in Class 38. The Dunlop Rubber Co., Ltd., Fort Dunlop, Holly Lane, Erdington, Birmingham.

December 15, 1926

471,280 Representation of a key on each side of which are Chinese characters, the transliteration and translation of these characters are as follows: "HAI SZE," meaning "FOUR SEAS"—electric cables. Callender's Cable & Construction Co., Ltd., Hamilton House, Victoria Embankment, London, E. C. 4.
472,211 SILVERTOWN—electric cables, batteries, cells, etc. India Rubber, Gutta Percha & Telegraph Works Co., Ltd., 106, Cannon street, London, E. C. 4.
472,707 Representation of a tree, superimposed across this representation the word: "BELMA"—corsets, brassières, suspenders, garters, girdles, etc. Brookfield, Aitchison & Co., Ltd., 22, York street, Manchester.
473,175 GRIFFIN—elastic fabrics, webs, tissues, braids, cords, etc. Joseph Burgess & Son, Ltd., 12, Brougham street, Leicester.
474,595 Representation of a gondola guided by a gondolier; beneath this representation are the words: "THE GONDOLA BRAND"—goods manufactured from rubber and gutta percha. Naamlooze Vennootschap Handelmaatschappij Voorheen J. F. Sick & Co., Leeuvehaven 153b, Rotterdam, Holland.

December 22, 1926

472,478 Representation of the English seal and the words: "BRITANNIA RUBBER & KAMPTULICON COMPANY, LTD.—Waterproof clothing. Britannia Rubber & Kamptulicon Co., Ltd., 7, Newgate street, London, E. C. 1.
473,130 GALVORUBBER—all goods included in Class 40. Dunlop Rubber Co., Ltd., Fort Dunlop, Holly Lane, Erdington, Birmingham.
473,403 SPEEDWAY—boots, shoes, slippers, leggings and gaiters. The Liverpool Rubber Co., Ltd., Walton Works, Rice Lane, Walton, Liverpool.
474,690 MONARCH—machine belting. Stanley Gosman & Co., Ltd., Monarch Factory, 230 Long Lane, London, S. E. 1.
475,087 Representation of the flying foot of Mercury—games and sporting articles. The Goodyear Tire & Rubber Co., Akron, Ohio, U. S. A. (Mewburn, Ellis & Co., 70, Chancery Lane, London, W. C. 2.).
475,189 ETHERON—rubber and gutta percha goods. St. Helen's Cable & Rubber Co., Ltd., Bath Road, Slough, Buckinghamshire.

December 29, 1926

B473,351 MEND-A-TEAR—repairing patches. The Leicester Rubber Co., Ltd., Evington Valley Mills, Leicester.
473,983 Representation of a Cossack on horseback and the words: KOSSAKA BRAND—rainproof and waterproof garments not including boots, shoes and overshoes. T. Haythornthwaite & Sons, Ltd., Lodge Mill, Parden Lane, Burnley, Lancashire.

New Zealand

November 18, 1926

23,828 Square in the center of which is the representation of a ship surrounded by the words: "THE COLUMBUS RUBBER CO. OF MONTREAL LIMITED" and "RUBBER FOOTWEAR"—footwear. The Columbus Rubber Co. of Montreal, Ltd., 1349 Demontigny street, east, Montreal, Canada.
24,283 MACONITE—preparation for insulating electric cables. The Macintosh Cable Co., Ltd., Ashbourn Road Mills, Payne street, Derby, England.

Designs

United States

71,652 Tire tread. Term 14 years. Harold D. Reichard, assignor to The Racine Horseshoe Tire Co., both of Racine, Wisconsin.
71,757 Resilient tire. Term 14 years. Albert Hargraves, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.
71,771 Tire. Term 14 years. Harry B. Soulen, Milwaukee, Wisconsin, assignor to The Fisk Rubber Co., Chicopee Falls, Massachusetts.
71,829 Tire inflating gage. Term 7 years. Alrah B. Edwards, Big Springs, Texas.
71,846. Garter. Term 3½ years. George Henry Muar, New York, N. Y.

Dominion of Canada

7,315 Colostomy appliance consisting of a flat rubber pouch having a beaded ring at one side bedded in a recessed holder pad. Thomas J. Lecras, Toronto, Ontario.

Germany

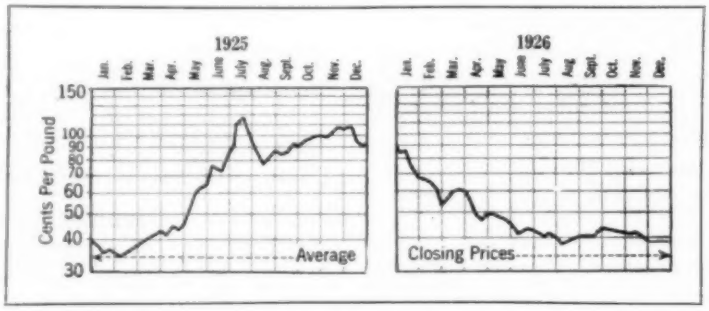
968,756 Rubber heel. Anton Lehmann, Vennhauser Allee 22, Dusseldorf-Eller.
969,568 Spray with air pump. Erwin A. Wille, Zeil 50, Frankfurt-am-Main.
969,695 Rubber collar. Alfred Sauer, Schönau a. d. Katzbach.
969,780 Sanitary garment with exchangeable rubberized insert. Israel Koppel, Weidenweg 77, Berlin.
969,988 Inflatable dolls or similar figures as well as animal forms of rubber sheet with automatically closing valves, with or without voice. Gummiwerk Union Carl O. Witthauer, Neustadt bei Koburg.
970,047 Metal and rubber tube for drawing off benzine, benzol and the like. International Asbest-, Gummi- & Kaltleim-Industrie G. m. b. H., Hamburg.
970,076 Rubber air cushions. Nordgummiwerke A. G., Berlin.
970,147 Athletic shoe. Mannheimer Gummi-, Guttapercha- & Asbest-Fabrik A.-G., Mannheim.
970,235 Women's elastic goods. L. E. Toelle Nachf., Barmen.
970,240 Protective cover for pneumatic tire. Ernst Limberg, Hüls b. Recklinghausen.
970,375 Conveyer belt. Pahlsche Gummi-und Asbest-Gesellschaft m. b. H., Düsseldorf.
970,473 Rubber footwear designed to permit the passage of perspiration. Siegbert Gembicki, Giesebrechtstrasse 4, Charlottenburg.
970,993 Rubber cover for typewriter-rolls. Siemens-Schuckert-werke G. m. b. H., Berlin-Siemensstadt.
971,154 Inhaling apparatus for volatile medications. Amalie Müller, Erzbergerufer 15, Bonn.
971,521 Dressed, inflatable rubber figures. Herbert Lindemann, Königstrasse 52, Wandsbek.
971,522 Inflatable rubber figure decorated with sponge rubber. Herbert Lindemann, Königstrasse 52, Wandsbek.
971,959 Rubber covered automobile guard rod. Hans Seeger, Kronprinzendamm 7, Berlin-Halensee.
972,341 Washing glove of sponge rubber. Herbert Lindemann, Wandsbek.
972,427 Sword handle of hard rubber. Hannoversche Gummiwerke Excelsior, A.-G., Hannover-Linmer.
972,577 Rubber block belt. Rudolf Roderwald, Menzelstrasse 9, Berlin-Grunewald.
972,820 Bathing cap with colored designs in relief. Degufrah Deutsche Gummiwaren-Fabrik Franz Au & von der Halben, Berlin-Weissensee.
973,032 Rubber conveyer belt. Firma Wilhelm Menge, Hannover.
973,099 Saddle with rubber surface for motorcycles. Bruno Götze, Grossvoigtsberg, Bez. Dresden.
973,115 Bathing cap of rubberized fabric decorated in colors with elastic rubber edge of the same color vulcanized on. Gebruder Levinstein, Berlin.
973,317 Rubber toy balloon. Walter Braendli, Herent, Belgium. Represented by M. Mossig, Berlin S. W. 29.
973,345 Expander with cable of pure rubber. Buckhausen & Co., Harburg a. d. E.
973,427 Panties of thin sheet rubber. Gummiwarenfabrik Carl Flaat, Köln-Nippes.
973,476 Rubber shoe protector for ladies low shoes. John Goldschmidt, Schönhausenstrasse 19, Leipzig-Gohlis.
973,526 Exchangeable rubber cap for billiard cues. Hans Liewig, Patenttechnisches Bureau, Berlin-Lichterfelde.

Annual Market Reviews for 1926

New York Outside Rubber Market

THE course of spot rubber prices in the outside market, as shown on the chart for 1926, exhibits a general decline for the whole year. This condition is practically the reverse of that prevailing in 1925. At the beginning of this period spot rubber was about 40 cents a pound, advancing to a peak of $1.20 in July, 1925, closing that year at about 90 cents. The decline begun in December, 1925, increased in rapidity and brought the price to 40 cents in six months, or a drop of 80 cents from the peak of July, 1925.

For the last half of 1926 the spot price has not deviated greatly from the 40-cent level and throughout December was continuously below it. The decline of prices in 1926 reflected the decrease in demand and consequent increase of the world's visible supply. The world's production for 1926 was 615,000 tons, distributed approximately as follows: In the United States, 400,000 tons; in other countries, 145,000 tons; stocks held over, 75,000 tons. The estimate one year ago that the 1926 consumption of crude rubber in the United States would amount to 400,000 tons was not realized. It is estimated now at 359,414 tons. In 1925 it was 389,000 tons. The decrease of 29,600 tons is largely accounted for by the advance in the consumption of reclaimed rubber 32,000 tons over that used in 1925.



New York Outside Market—Closing Spot Prices Ribbed Smoked Sheets—1925-1926

The estimated consumption figures for the rubber industry in the United States for 1927 in comparison with those for 1926 are as follows:

	1926 Tons	1927 Tons
Consumption of Crude	359,400	370,000
Consumption of Reclaim	164,000	175,000

The 1927 estimates are based on the assumption of 10 per cent increase in tire production, with allowance for the higher proportion of rubber required in balloon tires, pneumatic truck and bus tires.

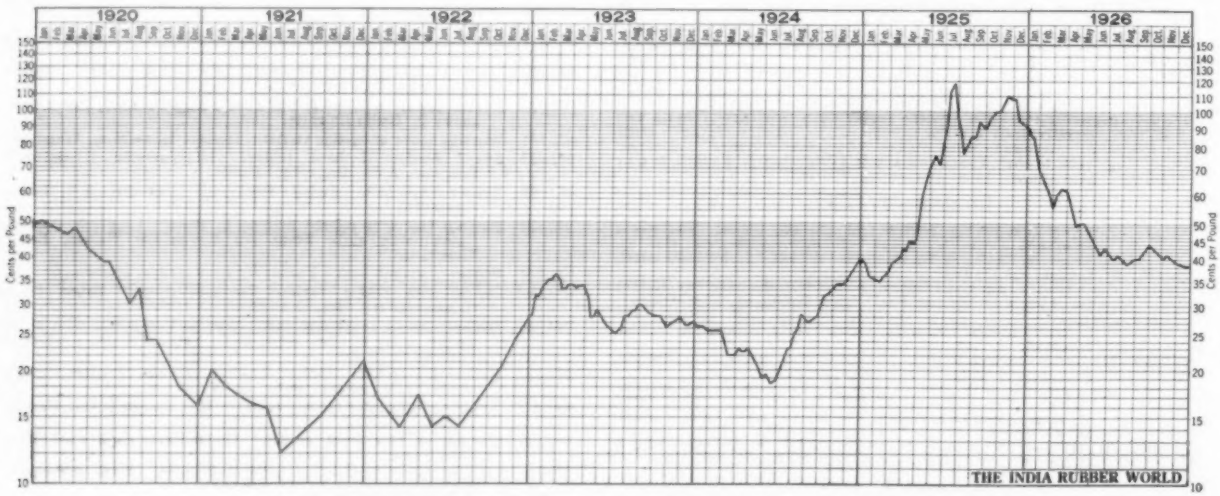
Viewed progressively the 1926 New York outside market began the first of January with spot ribbed smoked sheets at 91 cents sellers and first latex crêpe at 2 cents premium. Demand was slack because of a hostile attitude of consuming interests against restriction, and the consequent brisk decline in price induced considerable factory reselling of futures. Automobile and tire manufacturers were inclined to await the reaction of the motoring public toward balloon tires. On January 30 ribs were down to 68¼ cents sellers.

The 100 per cent of standard production set as exportable allowance effective February 1 served to depress prices. The entire month of February was dull, featured by dealers' business rather than by that of manufacturers.

Spot prices opened at 67 cents, sellers, and sagged steadily to 60 cents at the close of the month. Spot first latex crêpe averaged 1⅓ cents premium over ribs, ranging from 1½ to 3 cents, the latter premium occurring in the last week.

The event of the month was the opening on the 15th of the New York Rubber Exchange, Inc., with a large and representative membership, for trading in rubber futures.

March market conditions were essentially like those prevailing in February, with speculative conditions prevailing both in London and New York. Active factory buying was looked for with the increase of tire schedules set for April 1. Meantime rubber



New York Outside Market Closing Prices Ribbed Smoked Sheets—1920-1926

New York Outside Market—Low and High Spot Rubber Prices—1918-1926

Prices in Cents Per Pound

		January	February	March	April	May	June	July	August	September	October	November	December
1918,	First latex crêpe	53 @ 58	52½@ 57	55½@ 60	59½@ 70	63 @ 68½	60 @ 63	63 @....	63 @...	60½@ 63	59 @ 60½	41 @ 63	54 @ 63
	Ribbed smoked sheets	54 @ 57½	53 @ 57	55½@ 60	59½@ 70	62 @ 68½	62 @...	62 @....	62 @...	59½@ 62	58 @ 59½	40 @ 61½	52 @ 61½
	Upriver fine	57 @ 61	56 @ 58	56 @ 60½	60 @ 70	68 @...	68 @...	68 @....	68 @...	68 @...	63 @ 68	57½@ 68	61 @ 68
	Upriver coarse	37 @ 41	35½@ 37½	34 @ 38½	38 @ 42	40 @...	40 @...	40 @....	40 @...	40 @...	35 @ 40	31 @ 40	36 @ 40
1919,	First latex crêpe	52 @ 58	56 @ 58	51 @ 56	47 @ 50½	45½@ 48	40 @ 45	39½@ 42½	41¾@ 45½	45½@ 52½	49½@ 55	53 @ 54¾	51 @ 54¾
	Ribbed smoked sheets	51 @ 56	54 @ 57	50 @ 54½	44½@ 49½	44½@ 47	39 @ 44	38½@ 41½	39¾@ 44½	44½@ 51½	48½@ 54	52 @ 54	51 @ 54½
	Upriver fine	58½@ 61	58½@ 59½	55½@ 58½	56 @...	46½@ 50	55½@ 56¾	55 @ 55½	54 @ 55	54½@ 56	52 @ 55	49½@ 52	47 @ 49
	Upriver coarse	34 @ 36	34 @ 35	34 @ 35	34 @...	36½@ 44	32½@ 34	32 @ 33	31½@ 32	32 @ 33½	33 @ 35	34½@ 35	35 @...
1920,	First latex crêpe	51 @ 55¾	45¾@ 51½	46 @ 48¾	42½@ 46½	38 @ 43¾	37½@ 39	30 @ 35¾	29¾@ 33¾	24½@ 29	21 @ 26	18½@ 21	16¾@ 19½
	Ribbed smoked sheets	51 @ 55	45 @ 56½	46 @ 48	42½@ 45	38 @ 43	37¼@ 39	29½@ 35	29½@ 33¾	23½@ 28¾	20 @ 24	17½@ 19	16 @ 18½
	Upriver fine	45 @ 50	42½@ 45	41½@ 43	40½@ 42	29 @ 41¾	36¾@ 38½	34½@ 35½	30 @ 35	26 @ 30	23½@ 26	20½@ 23	18 @ 20¾
	Upriver coarse	34 @ 37	31½@ 34	31½@ 31¾	30 @ 32	29½@ 30½	27¼@ 28¾	22 @ 32	20 @ 27	16½@ 21	15 @ 16½	14½@ 15½	14 @ 15
1921,	First latex crêpe	19 @ 21¾	19½@ 20	18 @ 19½	18¾@ 19½	17½@ 19¾	13½@ 17½	14 @ 17	14¼@ 17	14 @ 16	15 @ 17	16 @ 19¾	18 @ 21
	Ribbed smoked sheets	18 @ 20½	17½@ 19	16¼@ 18	16 @ 17¾	15½@ 17½	11½@ 14½	11½@ 15½	13½@ 15	13¾@ 15¾	14¼@ 16	18½@ 19¾	21¼ 21¾
	Upriver fine	18 @ 19½	17 @ 17½	17 @ 18	16½@ 18	16½@ 18	15½@ 18	15½@ 17½	13½@ 19½	17½@ 21½	14¼@ 17	16 @ 19¾	18½@ 24
	Upriver coarse	13 @ 17	13½@ 14	11¾@ 12	09 @ 10½	08¾@ 09½	07 @ 09¼	07½@ 09	08¾@ 11½	09½@ 11½	11¼@ 12	12 @ 15	14 @ 15½
1922,	First latex crêpe	14 @ 16¾	16¾@ 15	13¾@ 15	14¾@ 16¾	14¾@ 16½	14¾@ 16½	14½@ 15¾	13¾@ 14¾	13¾@ 15½	15¼@ 22¾	22½@ 26	26¾@ 28¾
	Ribbed smoked sheets	15½@ 21¼	14¼@ 16¾	13 @ 15¼	14¼@ 16¾	14¾@ 16¾	14½@ 16¾	14¼@ 15¾	13¾@ 14¾	13¾@ 15¾	15½@ 22¾	22¼@ 26	26¾@ 28¾
	Upriver fine	17¼@ 23	16¾@ 18½	15 @ 17¾	15¾@ 19¾	14¾@ 16¾	14¾@ 18¾	13¾@ 20	13¾@ 19½	13¾@ 18¾	15½@ 18½	22¼@ 24	23¾@ 25¾
	Upriver coarse	12¾@ 18	12 @ 13¾	12 @ 13	12½@ 14	12½@ 13¾	12¼@ 13	12¼@ 14	13 @ 14	13½@ 14	13½@ 19	23¾@ 25	23¾@ 25½
1923,	First latex crêpe	28½@ 37⅞	33⅜@ 36⅞	33⅜@ 35⅞	31⅛@ 34¼	26⅛@ 31⅜	24⅞@ 29¼	24⅞@ 28⅝	27⅛@ 30⅜	28½@ 30⅜	26¼@ 28½	27¼@ 28½	26⅜@ 27⅝
	Ribbed smoked sheets	28½@ 37⅞	33⅜@ 36⅞	33⅜@ 35⅞	31 @ 34½	26⅞@ 31⅜	24¾@ 29¼	24¾@ 28	27 @ 30⅜	28¾@ 29⅞	25¾@ 28½	26½@ 28½	26 @ 27⅝
	Upriver fine	24½@ 36	33 @ 36	30½@ 34	28½@ 30¾	26 @ 28	26¾@ 29	26½@ 28	28 @ 30⅜	26½@ 28½	22 @ 26¼	21½@ 24½	23½@ 25½
	Upriver coarse	18½@ 28¾	25 @ 28	26½@ 28½	21½@ 25½	21½@ 25	22¾@ 25	23½@ 25	24¾@ 28	24¾@ 28½	18 @ 22¾	17¾@ 19¾	18 @ 19
1924,	First latex crêpe	24¾@ 27	25 @ 26½	20½@ 25½	22¾@ 24	18 @ 23⅜	19⅜@ 21	19¾@ 23½	25¼@ 28¾	27 @ 28⅝	29 @ 33½	33½@ 35	35⅝@ 39¾
	Ribbed smoked sheets	24¾@ 26⅝	25 @ 26	20½@ 24¾	22 @ 23⅛	18⅝@ 22⅝	18⅝@ 19¾	18⅝@ 22⅝	24⅛@ 27¾	26¼@ 28	28¼@ 33	33⅜@ 35	35⅝@ 39¾
	Upriver fine	21 @ 23½	19¾@ 20½	18½@ 20½	19 @ 21½	18¼@ 21½	20 @ 21½	20 @ 23¼	23¼@ 28½	27 @ 30	28¾@ 32½	32½@ 34	33½@ 39¾
	Upriver coarse	17¼@ 18½	17 @ 17¼	15½@ 17½	16 @ 17½	13¼@ 16½	12½@ 14	12½@ 15¼	15 @ 17½	16¼@ 17½	18½@ 23	22 @ 24	23½@ 25
1925,	First latex crêpe	34¾@ 39½	34¾@ 39	38⅝@ 44½	41⅝@ 46¾	44¾@ 69½	69 @ 85	78 @ 1.22	71 @ 99	80 @ 96	92 @ 1.03½	99 @ 1.14	89 @ 1.10
	Ribbed smoked sheets	34¾@ 39½	34¾@ 38¾	38½@ 43¾	41¾@ 46	44¾@ 70	70 @ 87	81 @ 1.23	64 @ 99	79 @ 95	92 @ 1.02¼	98 @ 1.13	98 @ 1.10
	Upriver fine	33 @ 37	31½@ 33¾	31½@ 37	36 @ 37½	37¾@ 57	52 @ 78	76 @ 1.13½	59 @ 93	68 @ 75	71½@ 95	79 @ 1.03	79 @ 1.04
	Upriver coarse	26¼@ 29½	25¾@ 26¾	26½@ 30	29¾@ 31	31½@ 45	41 @ 62½	60 @ 74	46 @ 63	45 @ 49½	46 @ 63	60 @ 76	57 @ 76½
1926,	First latex crêpe	71 @ 92¼	57 @ 70	53½@ 64	47½@ 60	47 @ 50½	41½@ 45	40½@ 44½	41 @ 41	40¾@ 42½	42¼@ 43¾	38¾@ 42	36¾@ 39
	Ribbed smoked sheets	70 @ 91	55½@ 69	52¾@ 63	46½@ 59½	47 @ 50½	41½@ 45	40¼@ 44¼	36¾@ 41	42½@ 43	42¾@ 43	38½@ 42	36¾@ 39
	Upriver fine	62 @ 83	48 @ 63	44 @ 59½	41 @ 53½	38 @ 43	34 @ 37	37 @ 41	37 @ 39½	38 @ 40	38 @ 39	32½@ 38	31 @ 33
	Upriver coarse	38 @ 64	30 @ 50	35 @ 45	30 @ 38	24½@ 30¼	20 @ 24½	23 @ 25¼	21 @ 24½	26½@ 27	28 @ 30	22 @ 28	21 @ 26

companies continued to resell their spring futures. On March 2 spot ribs were 56½ cents, sellers. Dealer support served to stiffen the prices by March 12 to 62¼ cents, from which level it declined to 58¼ cents on March 31.

The April market was equally as dull as that of the two months preceding, the prices registering a decline of 10 cents from the 1st to the 30th, the month opening at 58½ cents, sellers, and closing at 48½ cents.

The outstanding event of the month was an official statement of the following changes in the Stevenson restriction plan. The exportable allowance for the quarter beginning May 1 would be 100 per cent; beginning August 1, the quarterly price average will be increased from 15 pence a pound to 21 pence a pound. The effect of this announcement was to depress prices and paralyze business.

Continued dullness marked the May market. Between May 4 and 28 sellers' prices dropped from 49⅛ cents to 43¾ cents. Factory interest was at low ebb. Manufacturers were buying sparingly and waiting for the market on futures to reach bottom. Most of the market interest centered in the Rubber Exchange, where some speculative selling appeared.

The June rubber market proved even duller than May. Factory interest was practically dead and the market was thus without any supporting demand from the manufacturers regardless of the declining average London price, which was then considerably under the pivotal average of 21 pence necessary to avoid 20 per cent reduction from standard production. Explanation for the indifference of rubber manufacturers in this matter was found in the large stocks accumulated in London and the United States, and renewed confidence in the economic possibilities of reclaimed rubber.

The July market continued the entire month to display complete lack of interest on the part of consumers. Spot prices of ribs steadily declined regardless of the effect on the quarterly average price in London. Dealers declined to operate and, like the manufacturers, awaited restriction developments due August 1. The range of spot prices on June 1 was 42¼ cents, sellers, and 40⅞ cents, sellers, on the 30th.

August developed no change in the general apathy of the consuming interests toward buying notwithstanding the announcement August 5 by the Colonial Office that 21 pence would be retained as the determining point in the decision of restriction for the quarter beginning November 1. On August 2 spot ribs were 38¾ cents, sellers, and gradually firmed to 40¾ cents on August 31.

The September market maintained a higher average price level than that of August. For the first three weeks spot ribs were virtually steady at 40½ cents, sellers. In the fourth week there was a brief rally which carried the price for the last three days of the month to 42¾ cents. Factories displayed no interest in futures at 43 and 44 cents. No rubber of consequence was sold during the month to the general run of factories for 1927 consumption.

The October market was very firm and steady. Prices of spot fluctuated less than one cent between September 25 and October 23. The general tendency was downward from 43 cents, sellers, on October 1, to 42¼ cents, sellers, on October 30.

October 25 the Colonial Office announced new restriction rules for the ensuing year, based on London quarterly average prices as follows: (1.) If the price is under 21, but not under 15 pence during any quarter, the exportable percentage for the ensuing quarter will be reduced by 10. If the reduction is from 100 per cent the reduced percentage will be 80. (2.) If the price is not under 21, but less than 24 pence, there will be no change in the ensuing quarter. If in each of three consecutive quarters the average is not under 21, the percentage for the ensuing quarter will be increased by 10. (3.) If the price for any quarter is 24 or over, the percentage will be then increased by 10 for the ensuing quarter.

If the increase is from 80 per cent the increased percentage will be 100. (4.) If the average descends below 15 in any quarter, the percentage in the ensuing quarter will be reduced to 60. (5.) If the average exceeds 26 in any quarter, the percentage in the ensuing quarter will be increased to 100. (6.) In no case will the percentage be above 100 or below 60.

Notwithstanding these drastic rules the market eased slightly on nearby positions and firmed correspondingly on those of 1927, when the effect of the new regulations will become apparent in restriction results.

In November the market was extremely weak and showed greater dullness than for many months preceding. At the opening the waiting attitude assumed by dealers and consumers in relation to the expected ruling on unused export coupons and the strong statistical position of rubber resulted in scattered business only. Also the approach of the annual inventory period operated in the same way. The price tendency was naturally downward the whole month. November 1 spot was 41½ cents, sellers, and on November 30, 37⅛ cents.

The December market equalled in dullness that of November, but prices were firm and advancing. December 1 spot was 36¾ cents, sellers, and on December 31, 38¾ cents. Consumers' interest was confined to small filling lots for immediate use. The outstanding market event was the announcement early in the month that a group of the leading rubber and automobile manufacturing companies had formed a buying organization to maintain a reserve of 50,000 tons of rubber in New York, the object being to prevent serious price fluctuations by dividing the price control between the rubber growers and rubber manufacturers.

During the year London stocks advanced at an average rate of 3,521 tons monthly from 6,129 tons on January 4 to 48,382 tons on December 28.

The Rubber Exchange of New York

One of the most important developments affecting crude rubber trading in the United States was the establishment of the Rubber Exchange of New York, which began functioning February 15, 1926, under the presidency of Frank R. Henderson, by whose initiative it was organized.

Trading on the Rubber Exchange continued very active since its opening even through the dull summer period. The volume of business indicated general interest notwithstanding the "bear" market. During its first 10 months of operation 54,110 contracts changed hands, representing 135,275 tons valued at $138,000,000.

The March market was firm, strong and steady. March and April positions advanced 3.7 and 3.2 cents respectively, while December and January each advanced 3.5 cents.

April was marked by an increase of individual transactions and an orderly price decline. Ranges for the months most heavily traded in were May, high 48.60, low 46.10; July, high 46.90, low 44.20. Lack of factory interest and complications of British labor troubles were responsible in May for a marked decline in June and July futures, June advancing to 48.50 cents and July to 47.00 cents.

June trading was of record volume. A change in the market rules introduced "new" contracts in place of "old," empowering the Adjustment Committee to fix the price differentials on good and ordinary F. A. Q. ribbed smoked sheets on the 15th day of each month to prevail on deliveries under new contracts during the next calendar month. Prices of all futures held very steady, although the ranges of high and low were rather wide. June futures rose to 46.20, with all nearby positions under pressure.

July was featureless. A waiting attitude prevailed because of the strong statistical position of rubber. The prices for future positions in all instances exhibited much narrower spreads than usual. Prices for futures advanced to 44.00 cents.

August operations increased in volume following the announcement of the Colonial Office that the exportable allowance for August, September and October would remain at 100 per cent of standard. Nearby futures were down to the 37 cent level and distant futures at 40 cents.

September was generally inactive with only minor changes in price levels. Heavy arrivals, the increase of stocks in London and the United States and absence of consuming demand combined to emphasize market dullness notwithstanding that rubber was purchasable at attractive prices in both spot and future positions. All positions advanced in price, October rubber rose from 40.1 to 42.8 cents.

October transactions increased 35 per cent over those in September, improved interest showing particularly in January to March positions. Announcement of new regulations for restriction caused spot and nearby positions to weaken. Although drastic, the new rules were considered an improvement over the former because they are established for a year. High and low prices were very close, nearby was 42.00 to 43.00, while distant were between 44 and 45 cents.

The November market showed considerable dullness. Traders rather than consumers evinced whatever of interest existed. This condition was particularly noticeable toward the close of the month. Fluctuations of prices were narrow until the last week, when all positions took a spread of 2 cents.

In December new lows were recorded in all positions. Typical of the general dullness of the market was the virtual absence of difference between the high and low prices for December rubber. The extremes for December rubber for the month were 38.9 cents high to 36.6 cents low.

Cotton and Fabrics

American Cotton

In 1926 the price of spot middling upland cotton continued to decline from January to October at about the same rate that it did in 1925. This decline lowered the price from 20½ cents on January 1 to 17 cents on September 30. Then followed in October a sensational drop to 12½ cents, from which there was practically no recovery to the end of the year.

United States Crude and Waste Rubber Imports for 1926 (By Months)

	Plantations	Parás	Africans	Centrals	Guayule	Manicobas and Matto Grosso	Total 1926	Total 1925	Balata	Miscellaneous	Waste
January ..... *tons*	36,372	856	791	515	153	10	38,697	29,960	94	607	1,227
February	31,832	1,548	227	250	204	6	34,067	23,456	19	728	729
March	40,177	1,426	334	256	482	2	42,677	33,914	30	1,264	324
April	30,766	854	164	392	494	8	32,678	27,231	35	864	216
May	27,915	1,431	199	449	417	..	30,411	36,889	52	932	171
June	27,915	960	246	568	418	..	30,107	30,337	41	1,076	208
July	35,537	800	36	419	295	..	37,087	33,918	10	1,141	372
August	24,431	640	175	496	240	..	25,982	31,584	40	840	1,033
September	36,030	1,098	362	416	226	..	38,132	27,071	43	1,075	235
October	25,872	1,051	651	348	192	..	28,114	34,908	61	1,028	219
November	39,212	1,025	296	379	195	..	41,107	36,050	45	1,055	584
December	30,689	1,495	138	373	208	..	32,903	39,519	81	805	335
Totals, 12 months, 1926 *tons*	386,748	13,184	3,619	4,861	3,524	26	411,962	.....	551	11,415	5,655
Totals, 12 months, 1925.....	356,731	16,376	3,010	4,964	3,505	251	.....	384,837	775	11,126	4,104

Compiled from statistics supplied by the Rubber Association of America, Inc.

The 1925 crop of 15,750,000 bales started the long gradual decline 3 months before 1926 opened. The January market discounted this crop, stabilizing prices around 21 cents early in the month. Expectation of broadening of the world demand assisted in sustaining the price between 20 and 21 cents until the middle of the month, after which the market waited for a new guiding impulse. General opinion favored a reduction in acreage of the new crop.

During February the market ruled dull without definite trend in prices. The spot price deviated less than one-quarter of a cent above and below 20¾ cents practically the entire month. In March cotton was generaly quiet and dull. The price held practically steady, being on March 1, 19.45 cents and on March 31, 19.25 cents.

Advices that the same area would be planted for the 1926 crop as was planted for 1925 brought forth the opinion, fully justified by the market outcome six months later, that the only hope for the constructive side of the market appeared to be that if some calamity did not overtake the growing crop, cotton might sell down to 12 cents, which would be below the cost of production.

April showed very little activity and but slight price variation. On April 1 the price was 19.35 cents and on April 30 18.90 cents. The gloomy and stagnant conditions that characterized the market for the first quarter year were attributed to the late crop start. Late April sentiment was pessimistic, fearing the possibility of a third bumper crop in succession.

In May the market conditions essentially duplicated those for April. The trade was awaiting convincing news of crop progress and the market was governed largely by weather conditions in the cotton belt. The price varied but slightly from 18.95 cents, at which level it remained practically from the 1st to the 28th of the month. The June market was described professionally as a traders' market, with weather the dominant factor. The spot price was somewhat more fluctuating than in May, although at a fractionally lower level. On June 1 it was 18.85 cents and on June 30, 18.40 cents.

July was also dull and declining at the start, but turned stronger on news of unfavorable weather. The area under cultivation was reported as 48,898,000 acres, compared with 48,090,000 at the end of June, 1925. First crop indication was 15,635,000 bales. On July 1 spot was 18.40 cents and on July 31 19.05 cents. The August market was dull and declining in the first half.

The price August 2 was 19.20 cents. In the week following the heavy July crop report caused a decline, which reached its lowest figure of 17.70 cents on August 12. The critical condition of the crop and the uncertainty of weather conditions caused the price to react upward, gaining the 19 cent level on August 24.

The September market continued the decline of prices throughout the month. On September 1 spot was 18.9 cents, to which point it reacted from the 16 cent level just before the report estimating the growing crop as of August 16 at 15,248,000 bales. A heavy jolt, however, came in the report of 15,810,000 bales as of September 16, which forced the price to 15.05 on September 23, falling to 14.9 on September 30.

The chief feature of the October market was the sensational drop of the spot price to 12.45 cents on the 26th. This was due to the government report indicating a crop of 16,627,000 bales, sending the price below the cost of production. The report of October 25 advanced the yield to 17,454,000 bales. The situation created caused President Coolidge to appoint a cotton commission to cooperate with southern organizations to formulate a plan of financing the crop.

The chief feature of the November market was its steadiness above the 12½ cent level notwithstanding the advance of crop estimates to 17,918,000 November 1 and 18,399,000 bales November 14. The last figure is 2,295,000 bales greater than the 1925 crop. On November 1 spot was 12.85 cents and on November 30 12.80 cents.

The range of December spot quotations was very narrow. Between the 1st and the 25th, low was 12.15 cents and high 13.10 cents, with the tendency upward. The last government report for the season, issued December 8, indicated the full crop at 18,618,000 bales. These figures were without other market effect than to cause a decline to 11½ cents. Returns from the campaign for the reduction of cotton acreage for 1927 season's planting indicate that there will be a decrease of about 27 per cent from the area used in 1926.

Egyptian Cotton

Egyptian cotton prices were irregularly downward, with occasional temporary upward turns. Between January and November, 1926, Sakel No. 42 declined from 39½ cents to 28 cents and Uppers No. 10 from 32 cents to 19 cents. The attempt of the Egyptian government to sustain cotton prices failed. The result was that spinners, particularly in England, gave greater attention to the use of other growths, and in the United States tire fabric mills, which prefer Egyptian cotton in many cases, substituted American staple cotton.

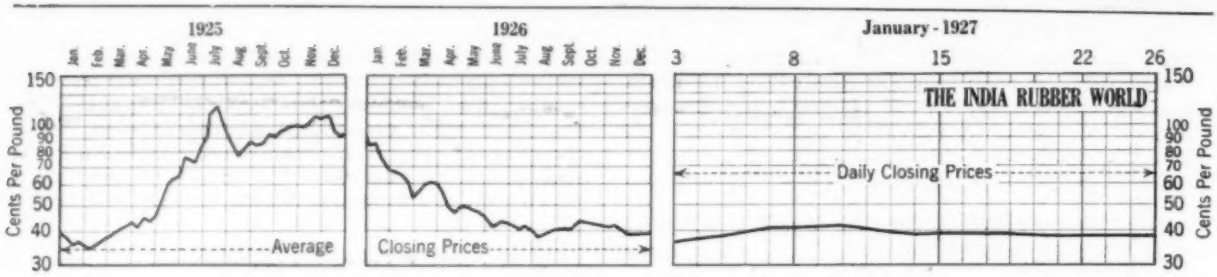
Tire Fabrics

The volume of tire fabric business placed in the first 8 months of 1926 was reported as 98,136,452 pounds. That placed in the last 4 months of the year is estimated at about 21,000,000 pounds. The total for the year would be about 121,000,000 pounds. Prices were considered low at the beginning of the year, when carded peeler square woven fabric was quoted at 46 cents and 23/5/3 carded peeler cords at 48 cents. These prices steadily declined throughout the year and in November reached 36 cents for square woven fabric and 35 cents for 23/5/3 cords. Egyptian cotton fabrics have been practically superseded by carded peeler. The January price for carded Egyptian square woven and cords was 56 cents. This price steadily declined, reaching 46 cents in October, with no quotations for the remainder of the year.

Business in February was quiet, with some spring filling in orders. It became evident that the big tire manufacturing companies will largely control the production of the fabric they consume. Curtailment of tire production, awaiting delayed orders, caused unusually quiet conditions in March. In April fabric mills were working on contracts with tire manufacturers on reduced schedules. Two notable contracts were reported in May, one of 5,000,000 pounds, with 10,000,000 pounds to be made annually, and the other for 200,000,000 pounds, with deliveries covering a period of 10 years. The demand in general was less than normal, with tire factories hesitating to purchase fabric materials for their further needs.

During June and July quiet market conditions prevailed. Fabric mills were operating on normal schedules but shipments were deferred. No combed yarns were being used. Mill stocks in August were at a moderately low level. Heavy sales were reported from Akron for August to October delivery. Following Labor Day the September business became exceedingly active. In the first three weeks of September 5,000,000 pounds were contracted and the mills were sold ahead. Inquiries and sales were well maintained in October, and between the 1st and the 25th contracts totaled 15,000,000 pounds. Tire price reductions and spring dating produced large interest in the November fabric market, resulting in commitments for delivery in the first half of 1927. Tire mills were thought to be covered for about 30 per cent of their needs for that period and the fabric situation looked much improved. Practically nothing was done in square woven fabric in this buying movement.

In the last month of the year tire fabrics ruled rather quiet, although inquiries progressed in interest as December advanced. About the middle of the month large business appeared, with tire companies seeking to cover their January-June needs and quotations were firm.



Ratio Graph of New York Closing Prices of Spot Ribbed Smoked Sheets

Review of the Crude Rubber Market

New York Outside Market

DURING the past month there was little business done in rubber and the market was generally dull. A mild upward reaction marked the first half of January, and since then the price has declined more than it advanced because sellers have steadily outnumbered buyers. Factories are interested now only in bargain prices. The local market is lower than that in Singapore where an advance is expected. Consumers consider that there is plenty of rubber in sight to warrant lower prices under the protecting influence of the new American syndicate reserves. The highest spot quotation for January was 40¾ cents on the 10th. On the 26th the price was 38 cents.

The first week, ended January 1, buyers and sellers were marking time. Spot prices fluctuated narrowly with downward trend, being 39 cents on December 27, and 38⅛ cents on December 31. There was enough dealer support to firm the tone of the market in the absence of factory buying. Parás were quiet, steady and unchanged. Balata was without interest and showed little strength.

The second week opened firm with prices moving steadily upward from 38⅛ cents on January 3 to 40⅛ cents on the 7th and 8th. The advance was in conformity with London and Singapore price movements further strengthened by factory buying. Many factories, however, held off, hoping for concessions to materialize. Light arrivals and the certainty of a 10 per cent reduction February 1 under the revised restriction rules held futures very firm. Parás were also firmer in sympathy and balata showed some advance and activity.

The third week, ended January 15, opened strong on report of large factory buying. The primary markets were very firm. Later, the cessation of consuming demand caused prices to decline. The course of spot prices was downward beginning at 40¾ cents on January 10 and ending at 39½ cents on January 15. On the latter date primary market prices came down a little but business in New York was dull and prices lower than primary market quotations due to the heavy arrivals for the week. Parás fell off in sympathy and balatas were quiet.

During the week ended January 22 prices gradually eased off because of lack of support. Factories bought only on recessions and were interested only in spot and nearby. The statistical position indicates lower prices and good buying movement is looked for when the 36 cent level is reached. The week closed with spot at 38½ cents, ¾ down from the price January 17. Parás were easier and balatas neglected. For the first three weeks reviewed first latex and ribbed smoked sheets were at the same prices. In the last week latex was at ¼ cent premium. The general dullness and lack of interest continued up to the 26th with spot down to 38 cents and weaker.

Importations of crude rubber in December were 32,903 tons compared with 39,519 tons one year ago. Plantation arrivals for December were 30,689 tons compared with 35,971 tons one year ago. Total importations of plantation rubber for 12 months ended December 31, 1926, were 386,748 tons, compared with 356,731 tons for the corresponding period of 1925. Total importations of all grades of rubber for the 12 months ended December 31, 1926, were 411,963 tons compared with 384,837 tons for the corresponding period of 1925.

Arrivals of crude rubber January 1 to 25 were 32,555 tons. Arrivals for the full month are estimated at 40,000 tons, as compared with 33,856 tons for December.

RUBBER AFLOAT TO THE UNITED STATES

(Figures in Long Tons)

Week ended	Bt. Malaya	Ceylon	E. Indies	London and Liverpool	Total
January 1	4,062	690	1,901	96	9,019
January 8	5,229	1,004	1,337	34	7,604
January 15	6,698	737	1,498	96	9,019
January 22	4,117	1,756	1,508	239	7,620

Low and High New York Spot Prices

	January							
	1927*			1926			1925	
PLANTATIONS								
First latex crêpe	$0.38½	@	$0.41½	$0.71	@	$0.92½	$0.34¼	@$0.40¾
Smoked sheet, ribbed	.38¼	@	.41½	.70	@	.91	.34¼	@ .40¾
PARAS								
Upriver, fine	.29¼	@	.34¼	.62	@	.83	.33½	@ .37
Upriver, coarse	.22	@	.25	.38	@	.64	.27	@ .30½
Islands, fine	.26	@	.31	.50	@	.68	.30	@ .34½
Cametá				.34	@	.45	.17½	@ .25½

*Figured to January 22, 1927.

New York Open Market—Spot Closing Rubber Prices—Cents Per Pound

PLANTATIONS	December, 1926					January, 1927															
Sheet	27	28	29	30	31	1*	3	4	5	6	7	8	10	11	12	13	14	15	17	18	19	20	21	22
Ribbed smoked	39¼	39	38⅞	38⅞	38¾	....	38⅝	39	39⅜	39¼	40⅛	40⅜	40¾	40⅞	40¾	39⅞	39⅜	39½	39¼	39⅛	39⅛	38½	38⅛	38½
Crêpe																								
First latex	39⅛	39	38⅞	38⅞	38⅞	....	38¾	39	39⅜	39¼	40⅜	40⅜	41⅛	41⅛	40⅝	40¼	39⅝	39⅝	39½	39⅜	39⅛	38¾	38⅝	38¾
No. 2 blanket	36½	36¾	36⅝	36⅝	36½	....	36⅝	36⅞	37	37⅛	38	38	38½	38⅜	38⅛	37¾	37⅛	37⅛	37⅛	36⅝	37	36⅜	36⅛	36½
No. 3 blanket	36⅛	36	36	36⅛	36	....	35⅞	36⅜	36½	36¾	37½	37½	38	37⅞	37⅝	37½	36⅝	36½	36⅜	35⅞	36¼	35¾	35⅜	35½
No. 4 blanket	35½	35⅜	35¼	35½	35⅜	....	35	35½	35¾	36⅛	36⅜	36⅜	37¼	37⅛	36½	36¼	35⅞	35½	35⅜	35	35½	34⅜	34½	34⅝
Thin clean brown	36⅛	36	36	36⅛	36	....	36	36⅜	36½	36⅞	37½	37⅜	38	37⅞	37⅝	37½	36¼	36¾	36⅜	36	36⅛	35½	35⅝	35⅞
Rolled brown	32⅝	32⅝	32⅝	32¼	32¼	....	32	32¼	32⅝	33⅛	33⅝	33⅜	34⅛	34⅛	33⅝	33¼	33⅛	33	32½	33	32¼	31⅞	31⅞	32⅛
Off latex	38⅛	38½	38⅛	38¼	38⅛	....	38¼	38⅝	38⅞	39¼	40	39⅞	40⅛	40½	39¾	39⅜	39¼	39¼	39	38⅞	38⅞	38⅛	38	38¼

*Holiday.

New York Quotations

Following are the New York spot and future rubber quotations for one year ago, one month ago and January 25, the current date:

Plantation Hevea	January 23, 1926		December 27, 1926		January 25, 1927	
Rubber latex (Hevea)....gal.	$2.50	@	$1.50	@	$1.50	@
CREPE						
First latex crêpe, spot....	.71	@.72	.39¼	@.39¼	.38¾	@.39
Jan.-Mar.	.70½	@.71	.39½	@.40	.39	@.39¼
Apr.-June	.68	@.69	.40	@.40½	.39¾	@.40
July-Sept.		@		@	.41	@
Off latex, spot	.70	@.72	.38½	@.39	.38¼	@.38½
Amber No. 2, spot	.69	@.70	.36½	@.37	.36¼	@.36½
Jan.-Mar.	.68	@.69	.36½	@.36¾	.36¼	@.36½
Apr.-June	.67	@.68	.36¾	@.37	.37	@
July-Sept.	.63	@.64		@	.37½	@
Amber No. 3, spot	.69	@.70	.35½	@.35¾	.35¼	@.36
Brown, thin, clean	.68	@.68½	.35¼	@.35¾	.35	@.35½
Brown specky	.67	@.68	.34¾	@.35¼	.35	@.35¾
Brown, roll	.62	@.63	.32	@.32½	.31½	@.32
Sole crêpe	.95	@	†.57	@	.60	@
Sheet						
Ribbed, smoked spot	.70	@.70½	.39	@.39¼	.38½	@.38¾
Jan.-Mar.	.69	@.70	.39½	@.40	.38¾	@.39
Apr.-June	.67	@.67½	.40	@.40½	.39½	@.40
July-Sept.	.63	@.64		@	.40¼	@.40½
East Indian						
PONTIANAK						
Banjermassin	.18	@	.12	@	.12	@
Pressed block	.28	@	.25	@	.23½	@
Sarawak	.18	@	.12	@		@
South American						
PARAS						
Upriver, fine	.62	@.63	.34	@.34½	.29	@
Upriver, fine	*	@	*	@		@
Upriver, medium	.55	@	.30	@.30½	.26	@
Upriver, coarse	.50	@.51	.24½	@.25	.22	@
Upriver, coarse	*	@	*	@	*.33½	@
Islands, fine	.50	@.51	.28	@.28½	.25½	@
Islands, fine	*	@	*	@		@
Acre, Bolivian, fine	.60	@	.34½	@.35	.30	@
Acre, Bolivian, fine	*	@	*	@	*.41	@
Beni, Bolivian	.61	@	.34½	@.35	.30	@
Madeira, fine		@	.34½	@.35	.30	@
Peruvian, fine	.58	@	.33	@.33½	.28	@
Tapajos, fine		@	.31	@.31½	.27	@
CAUCHO						
Upper Caucho ball	.52	@	.25	@.25½	.23	@
Upper Caucho ball		@	*	@	*.34	@
Lower Caucho ball	.53	@	.21	@.21½	.21	@
Maniçobas						
Ceará negro heads	†.55	@	.30	@	.24	@
Ceará scrap	†.35	@	.16	@	.14	@
Maniçoba, 30% guar	†.55	@	.31	@	.28	@
Mangabeira, thin sheet	†.60	@	.31	@	.28	@
Centrals						
Central scrap	.45	@.47	.23	@	.23	@
Central wet sheet	.35	@	.17	@	.17	@
Corinto scrap	.48	@.49	.23	@	.23	@
Esmeralda sausage	.48	@.49	.23	@	.23	@
Guayule						
Duro, washed and dried	.54	@	.31	@	.31	@
Gutta Percha						
Gutta Siak	.29	@.30	.30	@	.26½	@
Gutta Soh	.31	@	.38	@		@
Red Macassar	3.00	@	2.50	@3.00	3.00	@
Balata						
Block, Ciudad Bolivar	.63	@.64	.40	@.41	.39½	@
Colombia	.52	@.53	.38	@	.38	@
Panama	.50	@.51	.38	@		@
Surinam, sheet	.71	@.74	.71	@	.68	@
amber	.79	@.80	.78	@	.72	@
Chicle						
Honduras	‡.64	@	‡.56	@.60	‡.56	@.60
Yucatan, fine	‡.65	@	‡.56	@.60	‡.56	@.60

* Washed and dried crêpe. Shipment from Brazil.
† Nominal. ‡ Duty Paid.

DURING THE FIRST QUARTER OF 1926 THE UNITED STATES imported, according to the Foreign Commerce Department, 263,025,000 pounds of crude rubber, value $201,851,000, an average of 76.7 cents a pound. Importations during the second quarter decreased to 199,809,000 pounds, value $120,137,000, or 60.1 cents a pound. In the third quarter imports increased to 224,741,000 pounds, value $90,357,000, or 40.2 cents a pound. The average for the nine months was 59.9 cents, ranging downward from a February price of 79.8 cents to a September price of 39.2 cents a pound.

London

The London market made a slow start January 3, with spot ribs 18⅞ pence. As the week progressed buyers became aggressive, sellers held back, becoming increasingly reserved and the price advanced to 19⅞ pence on the 18th. The following week the market was quiet and steady. For the first three days business was moderate in volume and chiefly speculative followed by profit taking, causing the market to sag a bit and become featureless with sellers not disposed to grant concessions below 19⅞ pence, the closing price for the week. The third week began with a slight decline in futures. Spot was 19⅝ to 19¾ pence until the middle of the week with sales moderate in volume. Buyers' sentiment was strongly for a decline which eventuated on January 20 at 19½ pence, declining to 19⅜ pence on the 22nd.

London stocks continued to increase from week to week in January as they have been doing for the past year. The weekly record is as follows: January 1, 48,948 tons: January 8, 50,756 tons; January 15, 52,484 tons; January 22, 53,662 tons.

Singapore

The market in Singapore was generally steady and firm, opening January 3 at 18⅜ pence, sellers, for spot ribs. On the 7th there was an advance of one penny, reflecting the advance in London during a two days' native holiday. From January 10 to 15 there was fair business with the price ranging from 19⅜ pence on January 10 upward to 19⅝ on the 12th, becoming steady at 19¼ for the rest of the week. This price dropped to 19⅛ early the next week, declining on lower London cables to 18¾ on January 22. On the 25th the market was weakened somewhat, due to native selling. Singapore prices are ruling above those of New York because it is thought that reduction of the exportable allowance to 70 per cent for the quarter beginning February 1 will result in higher prices.

AMERICAN EXPORTS AND IMPORTS OF RUBBER

Statistics of interest to the rubber industry regarding American exports and imports appear in a booklet published by the Chamber of Commerce of the United States, entitled *Our World Trade, January-September*, 1926. The total commerce for the period in all commodities constituted the largest trade since 1920, the total import value having been exceeded only once before, in 1920. The high price of crude rubber during the first part of 1926 is said to be largely responsible for this high level, the total value of rubber imports, including latex, for the nine months under consideration reaching $412,345,000, as compared with $258,350,000 for the corresponding period of 1925, a gain of 59.6 per cent. A quantity comparison shows totals of 687,575,000 pounds and 635,954,000 respectively, or an advance of 8.1 per cent. A large advance is also noted in imports of balata, guayule, gutta percha, jelutong and other minor crude, scrap and reclaimed rubber, which combined reached a value of more than $3,000,000 for the nine months, a quantity comparison indicating 49,030,000 pounds and 37,228,000 pounds respectively, or a gain of 31.7 per cent.

Exports of rubber goods also continued this upward trend, automobile tires showing a gain of 21.7 in value, while shipments of rubber footwear advanced 23.2 in quantity. The number of tires exported declined, however, from 1,343,000 for the 1925 period to 1,160,000 for the nine months of 1926, a falling off of 13.6 per cent, tubes showing a decline in quantity of 25.9 per cent. Tire shipments reached the high figure of $21,392,000.

JAPAN'S EXPORTS OF RUBBER TIRES, ACCORDING TO *Commerce Reports*, for the first half of 1926 were valued at 2,510,000 yen, as compared with 2,725,000 yen for the corresponding period of 1925. One yen averaged $0.4096 during the first six months of 1925 and $0.4564 in the 1926 period. Japanese exports of rubber tires during October and November, 1926, were valued at 400,000 yen for each of the two months.

The Rubber Exchange of New York, Inc.

Trading on the Rubber Exchange from December 27 to January 22 inclusive resulted in the sale of 3,388 contracts, equivalent to 8,470 long tons as compared to 6,427 contracts and 16,067½ tons the previous month, November 25 to December 25, 1926. American consumption of rubber made a distinct gain in January over December and is certain to rapidly increase as tire production gains activity.

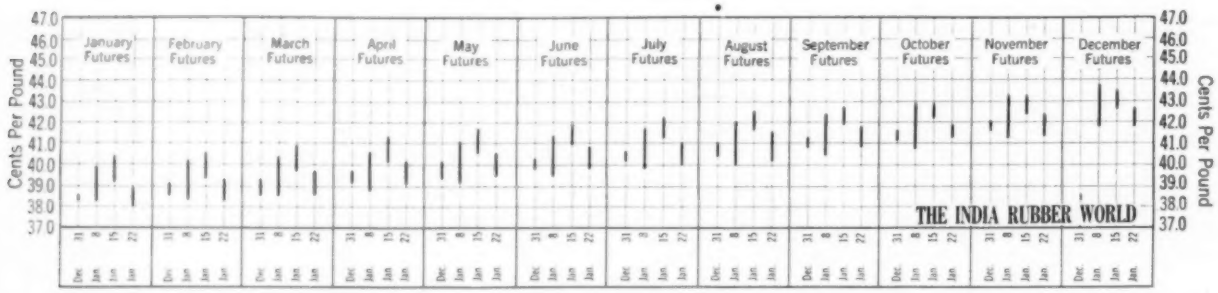
The market was very quiet and steady during the last week of December. The high on futures from January to October inclusive ranged from 38.90 to 41.80 cents.

During the first week of January sentiment favored the likelihood of higher levels for futures due to the technical position of stocks with relation to the operation of restriction under the revised rules for 1927. Between January 3 and 7 the range of high prices on futures from January to October inclusive was 40.00 to 42.20 cents. During the week from January 9 to 15 the market was very quiet and steady with an easier tendency toward the close. Futures, January to October, range from 40.20 cents to 43.00 cents.

In the week from January 15 to 22 the interest of manufacturers was on a hand-to-mouth basis gaining in intensity as prices declined. These declines ruled in all positions, the range of highs for the week on futures from January to October being from 38.90 to 41.20 cents.

Members of the Rubber Exchange will celebrate the first anniversary of the organization of the exchange with a dinner at the Hotel Roosevelt on February 15. J. Chester Cuppia, Fred B. Peterson, and Robert L. Baird comprise the dinner committee.

New York Rubber Exchange—Low Monthly Futures—Cents Per Pound—December 31, 1926 to January 22, 1927



The Rubber Exchange of New York, Inc.

Daily Market Futures—Ribbed Smoked Sheets—Closing Prices—Cents Per Pound

1926	December 27	28	29	30	31	January 1*	3	4	5	6	7	8	10	11	12	13	14	15	17	18	19	20	21	22
Dec...	36.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1927																								
Jan...	38.6	38.6	38.4	38.5	38.3	...	38.3	38.8	39.1	39.3	39.9	39.9	40.0	40.4	40.0	39.9	39.3	39.2	38.7	38.9	38.7	38.1	38.0	38.0
Feb...	39.1	39.0	38.8	38.7	38.6	...	38.4	39.2	39.2	39.7	40.1	40.2	40.6	40.5	40.0	39.2	39.4	39.4	39.1	39.3	39.2	38.5	38.3	38.4
Mar...	39.4	39.3	39.1	31.1	38.9	...	38.6	39.3	39.4	39.9	40.4	40.4	40.9	40.7	40.2	40.2	39.7	39.7	39.4	39.7	39.4	38.9	38.6	38.9
Apr...	39.7	39.6	39.3	39.4	39.2	...	38.8	39.6	39.8	40.3	40.6	40.6	41.3	41.2	40.7	40.7	40.1	40.3	39.8	40.1	39.8	39.3	39.1	39.3
May...	40.1	39.7	39.5	39.7	39.4	...	39.2	39.9	40.1	40.5	40.9	41.0	41.6	41.7	41.2	41.1	40.6	40.5	40.3	40.5	40.3	39.7	39.5	39.7
June..	40.3	40.1	39.7	40.0	39.8	...	39.5	40.2	40.4	40.8	41.3	41.3	41.9	41.9	41.5	41.4	41.0	40.9	40.6	40.8	40.6	40.0	39.8	39.9
July...	40.6	40.5	40.3	40.4	40.2	...	39.8	40.5	40.7	41.1	41.7	41.7	42.2	42.4	41.7	41.7	41.2	41.2	40.8	41.0	40.8	40.2	40.0	40.3
Aug...	41.0	40.9	40.6	40.6	40.4	...	40.0	40.7	40.9	41.4	42.0	42.0	42.3	42.5	41.9	41.9	41.6	41.6	41.2	41.5	41.2	40.6	40.2	40.5
Sept...	41.3	41.2	41.0	41.0	40.8	...	40.4	41.1	41.3	41.8	42.4	42.4	42.6	42.7	42.3	42.3	41.9	41.9	41.5	41.8	41.5	40.9	40.5	40.8
Oct...	41.6	41.6	41.3	41.3	41.1	...	40.7	41.4	41.7	42.2	42.9	42.9	42.9	43.0	42.6	42.6	42.2	42.2	41.9	42.2	41.9	41.3	41.1	41.2
Nov...	42.0	42.0	41.8	41.8	41.6	...	41.2	41.9	42.1	42.6	43.3	43.3	43.3	43.3	42.8	42.8	42.4	42.4	42.1	42.4	42.1	41.5	41.3	41.5
Dec...	...	38.6	38.4	38.5	38.3	...	41.7	42.4	42.6	43.0	43.7	43.5	43.5	43.5	43.0	43.0	42.6	42.6	42.4	42.7	42.4	41.8	41.6	41.8

*Holiday.

The following crude rubber importers, dealers, and brokers are listed in our Buyers' Directory. For complete information see Index of Advertisers on Page 106.

Araujo, J. G. & Co., Manaos, Brazil.
Astlett, H. A., & Co., New York, N. Y.
Baird Rubber & Trading Co., New York, N. Y.
Buckleton & Co., Ltd., Liverpool, England.
Chalfin, Joseph, & Co., Inc., New York, N. Y.
Chipman, R. L., New York, N. Y.
Dunbar, F. W., & Co., Inc., New York, N. Y.
Dunbar, J. Frank, Co., Inc., New York, N. Y.
Hankin, George, & Co., London, England.
Hardy, R. S:, Co., New York, N. Y.
Henderson Brothers & Co., Inc., New York, N. Y.
Hentz, H. & Co., New York, N. Y.
Hirsch, Adolph, & Co., New York, N. Y.
Jacoby, Ernest, Boston, Massachusetts.
Littlejohn & Co., Inc., New York, N. Y.
Muehlstein, H. & Co., New York, N. Y.
Nordmann, Rossmann & Co., Hamburg, Germany.
Wilson, Charles T., Co., Inc., New York, N. Y.

Revised Rubber Restriction Rules

The new rules announced last October for the control of plantation rubber from November 1, 1926, to October 31, 1927, follow:

The maximum amount of rubber which estates will be allowed to produce at the minimum rate of duty for any restriction quarter is governed by the average price for the preceding quarter in accordance with the quarterly average prices named below. If the average is under 15 pence per pound, exports for the following quarter will be cut down to 60 per cent of standard production; if between 15 and 21 pence, exports for the following quarter will be cut down by 10 per cent; if between 21 and 24 pence there will be no change in allowance; if between 24 and 36 pence exports for the following quarter will be increased by 10 per cent of standard production; if over 36 pence per pound, exports for the following quarter up to 100 per cent of standard production.

Reductions from 100 per cent will be to 80 per cent; increases from 80 per cent will be to 100 per cent; if the price averages between 21 and 24 pence for three successive quarters, export allowance will be increased by 10 per cent.

The operation of the restriction plan from its first application to date is shown in the following table. The quarterly average prices are given in pence and corresponding values in U. S. cents.

EXPORTABLE ALLOWANCE AND AVERAGE PRICE FOR EACH RESTRICTION QUARTER

Quarter	Quarterly Pence	Average Cents	Per Cent Allowance
Nov. (1922)—Jan. (1923)	14.285	24.02	60
Feb. Mar.—Apr. (1923)	16.858	28.50	60
May, June, July (1923)	14.242	24.07	65
Aug. Sept. Oct. (1923)	14.294	24.15	60
Nov., Dec. (1923) Jan. (1924)	14.175	23.95	60
Feb. Mar. Apr. (1924)	12.817	21.83	60
May, June, July (1924)	10.974	18.55	60
Aug. Sept. Oct. (1924)	14.632	24.71	55
Nov. Dec. (1924) Jan. (1925)	17.998	30.42	50
Feb. Mar. Apr. (1925)	19.356	32.71	55
May, June, July (1925)	38.469	64.91	65
Aug. Sept. Oct. (1925)	43.269	73.17	75
Nov. Dec. (1925) Jan. (1926)	36.709	62.04	85
Feb. Mar. Apr. (1926)	28.018	47.34	100
May, June, July (1926)	17.001	28.73	100
Aug. Sept. Oct. (1926)	20.199	34.15	100
Nov. Dec. (1926) Jan. (1927)	.....	.....	80

The average price for the first 4 restriction years was 21¾ pence, (22.68 cents). The average export allowance for the same period was 69⅜ per cent.

Export Restriction Legislation

Legislative enactments regulating the determination of standard production have been announced.

In the Federated Malay States the maximum rate of standard production for holdings of 25 acres and under shall be 400 pounds per acre of mature rubber, that is rubber 18 inches in girth at 3 feet from the ground.

In the Straits Settlements the following scale is official for assessing the standard production of over 25 acres in area. On areas the trees of which were planted in 1922 were 60 pounds per acre; in 1921, 180 pounds; in 1920, 240 pounds; and in 1919 or previously, 300 pounds per acre.

Unused Export Rights

Unused export rights in Ceylon and Malaya, on October 31, 1926, are officially given as follows: Ceylon 15,000 tons outstanding rights against which 7,000 tons of rubber are held. Malayan export rights represent 24,839 tons. Of this amount 6,315 tons of rubber are held by dealers, excluding stock on the islands of Singapore and Penang.

Stocks of rubber held by producers from holdings of over 100 acres total 24,329 tons; from over 25 but not over 100 acres, total 4,336 tons.

The unused export rights held by Federated Malay States producers, holders of over 100 acres, were 6,507 tons, of this 4,129 tons were held with rubber. The total stock of rubber held without export rights amounted to 12,456 tons.

Reclaimed Rubber

New York

Reclaim production in January was not as heavy as in the corresponding period a year ago, especially in the automobile topping and battery box trade. However, the demand for reclaims proved sufficient to maintain the plants in very active operation. The new tire schedules coming into effect will cause a marked increase in the requisitions for tire, tube and high tensile reclaims. If the output of manufactured rubber goods is maintained at the present level reclaim consumption will equal the ratio of last year.

Of the standard grades quoted below the dark tire grades, unwashed shoes and mechanical blends show a small fractional advance. The remainder of the list is unchanged from the quotations of a month ago.

New York Quotations

January 25, 1927

	Specific Gravity	Price Per Pound
Auto Tire		
Black	1.21	$0.09¼ @ $0.09½
Black, washed	1.18	.10¾ @ .11
Black selected tires	1.20	.10½ @ .11
Dark gray	1.35	.13½ @ .14
Light gray	1.38	.14 @ .14½
White	1.40	.17 @ .17½
High Tensile Black		
Super-reclaim, No. 1	1.20	.16 @ .17
No. 2	1.20	.16 @ .17
Shoe		
Unwashed	1.60	.08¼ @ .08¾
Washed	1.50	.11 @ .11½
Tube		
No. 1	1.00	.18½ @ .20
No. 2	1.18	.15½ @ .16½
Miscellaneous		
High grade, red	1.35	.16 @ .17
Truck tire, heavy gravity	1.55	.09 @ .09½
Truck tire, light gravity	1.40	.10 @ .10½
Mechanical blends	1.60	.08¾ @ .09

HERCULES RECLAIM

This is soft black reclaim of unusual characteristics and physical properties. It has a gravity of 1.18, shows an elongation at break of 600 per cent and tensile strength of 1,750 pounds per square inch. At current prices of crude this reclaim shows a saving of over 40 per cent in volume cost. Its milling characteristics are strongly suggestive of crude rubber. In calender and tubing machine it yields a smooth product and it is equally adapted to frictions.

The following reclaimed rubber dealers are listed in our Buyers' Directory. For complete information see Index of Advertisers on Page 106.

Bloomingdale Rubber Co., New York, N. Y.
Central Rubber Reclaiming Co., Findlay, Ohio.
Clapp, E. H., Rubber Co., Boston, Massachusetts.
Defiance Rubber Co., Defiance, Ohio.
Manhattan Rubber Manufacturing Co., Passaic, New Jersey.
Nearpara Rubber Co., Trenton, New Jersey.
New Jersey Rubber Co., Lambertville, New Jersey.
Pequanoc Rubber Co., Butler, New Jersey.
Philadelphia Rubber Works, Philadelphia, Pennsylvania.
Rubber Regenerating Co., Naugatuck, Connecticut.
Somerset Rubber Reclaiming Works, New Brunswick, New Jersey.
Stedman Rubber Products Co., South Braintree, Massachusetts.
U. S. Rubber Reclaiming Co., Inc., New York, N. Y.
Vulcan Recovery Co., Trenton, New Jersey.
Xylos Rubber Co., Akron, Ohio.

The Market for Rubber Scrap

New York

Available stocks of all qualities of scrap in dealers' hands are rather small, owing to severe winter conditions that earlier hindered collection and transportation. Reclaimers are well stocked with scrap, waiting renewal of the trade demand for reclaim which in the past month did not equal that of a year ago. Dealers expect a brisk demand to develop soon for scrap. Quotations of all grades are at somewhat lower levels than one month ago.

AIR-BRAKE HOSE. Prices have dropped $3 a ton with demand light. This is a particularly desirable grade of scrap because air hose is specification goods of high and uniform excellence of quality.

BOOTS AND SHOES. The auto-top trade has curtailed its demand to relatively small proportions compared to one month ago. Stocks are small but the heavy consumption of shoes indicates good spring collections.

INNER TUBES. These are in a dormant position awaiting, at lower levels, the needs of reclaimers.

TIRES. Collections have been small and the demand equally so. Export business has been very light.

Quotations for Carload Lots

January 25, 1927

Boots and Shoes			
Boots and shoes, black	lb.	$0.02	@ $0.02⅛
Red and white	lb.	.01	@ .01⅛
Trimmed arctics, black	lb.	.01	@ .01⅛
Untrimmed arctics	lb.	.005⅛	@ .00⅝
Tennis shoes and soles	lb.	.00¾	@ .00⅞
Hard Rubber			
No. 1 hard rubber	lb.	.12	@ .12½
Battery jars, black compound	lb.	.01¾	@ .01⅞
Inner Tubes			
No. 1, floating	lb.	.08¾	@ .08⅞
No. 2, compounded	lb.	.07	@ .07⅛
Red	lb.	.06¼	@ .06⅜
Mixed tubes	lb.	.06⅛	@ .06⅜
Mechanicals			
Mixed black scrap	lb.	.00¾	@ .00⅞
Heels	lb.	.00⅝	@ .00¾
Hose, air-brake	ton	33.00	@ 34.00
regular	ton	20.00	@ 21.00
No. 1 red	lb.	.02	@ .02⅛
No. 2 red	lb.	.01½	@ .01⅝
White, druggists' sundries	lb.	.03	@ .03⅛
Mechanical	lb.	.01¾	@ .01⅞
Tires			
Pneumatic Standard—			
Mixed auto tires with beads	ton	25.00	@ 26.00
Beadless	ton	34.00	@ 35.00
White auto tires with beads	ton	42.00	@ 43.00
Beadless	ton	53.00	@ 54.00
Mixed auto peelings	ton	35.00	@ 35.50
Solid—			
Mixed motor truck, clean	ton	33.00	@ 35.00

DURING 1926 THERE WERE 550,000 MOTOR VEHICLES EXPORTED from the United States and Canada, the value of these vehicles and parts, including engines and tires, reaching $475,000,000.

The following scrap rubber dealers are listed in our Buyers' Directory. For complete information see Index of Advertisers on Page 106.

Birkenstein, S., & Sons, Chicago, Illinois.
Chalfin, Joseph, & Co., Inc., New York, N. Y.
Cummings, Wm. H., & Sons, New York, N. Y.
Muehlstein, H., & Co., Inc., New York, N. Y.
Norton, M., & Co., Medford, Massachusetts.
Schnurmann, J., London, England.
Weber, Hermann, Hoboken, New Jersey.

Metal Market Review

New York

In some of the leading trade journals interesting statistics are appearing in connection with the past year's activities in the various metal markets, these reviews also indicating the prevailing trends for 1927. Of especial importance are the compilations regarding the steel industry where, according to *The Iron Age*, the gross output of American steel during 1926 represented a new high record, approximately 48,250,000 tons as compared with the best previous figure of 45,393,500 tons for 1925. New records were also made last year by all the steel producing countries, Great Britain, harassed by the coal strike, being the only exception. It is said that, for the first time since the war, the gross steel exports of the world exceeded in 1926 those of 1913. The three nations now leading in steel production are in the following order: the United States, Germany, and France.

ALUMINUM. The aluminum manufacturing industry, according to the biennial census of manufactures taken in 1926, showed an increase in values of 17.5 per cent in 1925, as compared with 1923, the previous census year. Although the new uses of aluminum in 1926 were not numerous, the progress in existing fields was also considerable.

ANTIMONY. The antimony market is firmer, the spot market remaining quiet. It is believed that the present political situation in China will have a tendency to raise prices.

COPPER. The world's copper production in 1926, according to the American Bureau of Metal Statistics, was 1,651,500 tons, while the outstanding features of the copper industry for the past year were record-breaking imports and domestic consumption for the United States, the year 1918 being the only one in which a greater amount of copper was utilized.

LEAD. Conditions in the lead market have for some time been satisfactory, although on January 20 the American Smelting & Refining Co. reduced prices $3 a ton to 7.50 cents a pound, New York, a new low price for many months.

STEEL. January business in steel is usually considered the poorest of the year, but the first month of 1927 is apparently proving an exception, especially from the standpoint of tonnage. Prices also remain firm, while all lines of steel commodities are said to be equally active.

TIN. Prices have continued remarkably steady, and a fair amount of business is reported. Prompt tin continues in the best demand, as consumers have little confidence in the future.

ZINC. During the middle of January there were several reductions in the price of zinc, the figure on January 21 declining to 6.50 to 6.55 cents a pound, East St. Louis, this being the lowest since 1924.

Basic Metals

January 20, 1927

	Cents per pound	
Aluminum, virgin, 98@99 per cent	26.00	@
Antimony	14.25	@ 14.50
Copper—Lake spot	13.375	@ 13.50
Electrolytic, spot	13.25	@ 13.375
Castings, refinery	13.00	@
Lead, spot, New York	7.50	@
Lead, spot, East St. Louis	7.30	@ 7.325
Nickel, ingot, pound	35.00	@
Tin, spot	66.25	@
Zinc, spot, New York	6.90	@ 6.95
Zinc, spot, East St. Louis	6.50	@ 6.55

Steel Wire

	Base per 100 lbs.	
Bright, plain wire, No. 9 gage	$2.50	@
Annealed fence wire	2.65	@
Galvanized wire No. 9	3.10	@
Spring wire	3.50	@

Copper Wire

BASE PRICE F. O. B. FACTORY

	Cents per pound	
Bare Copper Wire	15.375	@
No. 6, B. & S. gage	15.375	@
No. 8 B. & S. gage	15.375	@
No. 14 B. & S.	16.375	@

The Market for Compounding Ingredients

New York

THE customary seasonal falling off in the volume of business in December was not as marked as usual. The January and February revival of demand for compounding ingredients was promptly noticeable after the turn of the year and reached good volume in all standard lines during January.

ACCELERATORS. Business is holding up very satisfactorily. Prices are maintained at reasonable levels for all types. All of the better known accelerators are well established as to their special fitness for their curing effects in standard constructions, and are very generally utilized in all rubber factories.

ANTI-OXIDANTS. This most recent addition to the rubber compounders' resources is in high favor and finding very general application. Its value is being recognized in specification goods as well as in cheap competitive lines.

ASBESTINE. Early in the month an advance was made of 25 cents a ton at the works.

BENZOL. The demand steadily increased as the month advanced and is now excellent with ample supplies of spot.

CARBON BLACK. Early in the month business was fair at lower prices and improved as the month progressed without further change in prices.

CLAY. This stock is moving in large volume. In the cheaper qualities the competition is keen but the tonnage used of the better grades is steadily increasing.

LITHARGE. Early in the month consumers were doubtful as to the price stability of litharge and their demand was moderate in consequence. Business was later stimulated by two reductions of 25 cents per 100 pounds.

LITHOPONE. A good amount is reported booked for 1927 needs at no change in price. An active call continues for prompt shipment.

MINERAL RUBBER. The reaction of the rubber industry against the high prices of crude rubber was strongly reflected in the increased demand for mineral rubber. Its consumption for 1926 is said to have risen 40 to 50 per cent over that of 1925. Prices remain unchanged.

SOLVENT NAPHTHA. Contract business began well and actively increased as the month advanced. Spot stocks were not heavy.

ZINC OXIDE. Contracts for the first half of 1927 have been placed in fair volume. There is more confidence on the part of buyers because of the assured price stability and an active call for stocks continues.

Accelerators, Inorganic

Lead, carbonate	lb.	$0.09¾	@
Lead, red	lb.	.09	@
sublimed white	lb.	.11	@
sublimed blue	lb.	.09	@
super-sublimed white lead	lb.	.09½	@
Lime, R. M. hydrated	ton	15.00	@25.00
Litharge	lb.	.10½	@
Magnesia cal., light (bbls.)	lb.	.15	@
calcined, md. light (bbls.)	lb.		@
calcined, extra light (bbls.)	lb.		@
calcined, heavy (bbls.)	lb.	.04	@ .04¼
magnesium, carb., light		.08¾	@
Orange mineral A.A.A.	lb.	.13¾	@
Rubber lead No. 4	lb.		@

Accelerators, Organic

Aldehyde ammonia	lb.	.80	@ .85
Aniline (drums)	lb.	.15	@ .15¼
B. B.	lb.	1.05	@ 1.07
Captax	lb.	1.20	@ 1.50
Crylene, hard form	lb.	.70	@
Paste	lb.	.50	@
Di-ortho-tolylguanidine	lb.	1.00	@ 1.10
Diphenyl guanidine	lb.	.80	@ .88
Ethylidine aniline	lb.	.60	@ .65
Excellerex	lb.	.40	@
Formaldehyde aniline	lb.	.38	@ .42
Grasselerator 102	lb.	.80	@ .85
552	lb.	4.80	@ 5.00
808	lb.	1.25	@ 1.50
Heptene	lb.	.55	@
Hexamethylene tetramine	lb.	.80	@ .85
Hydrofuramide	lb.		@
Lithex	lb.	.18	@ .20
Methylene aniline	lb.		@
Methylene dianiline	lb.	.40	@
Monex	lb.	3.25	@
No. 999 lead oleate	lb.	.16½	@ .18
Piperidine penta-dithio-carb.	lb.	4.80	@ 5.50
R. & H. 50 (100 lb. drums)		.60	@ .68
Super-sulphur, No. 1	lb.	.50	@
No. 2	lb.	.18	@ .25
Tensilac No. 39	lb.	.55	@ .60
No. 41	lb.	.65	@ .68
Thionex	lb.	3.25	@
Thiocarbanilid	lb.	.22	@ .30
Trimene	lb.	.75	@
base	lb.	1.20	@ 1.35
Triphenylguanidine	lb.	.69	@ .73
Tuads	lb.	3.25	@
Vulcanex	lb.	.86	@
Vulcanol	lb.	1.08	@
Vulcone	lb.	.74	@
W-29	lb.	1.65	@
W-87	lb.		@
Zimate	lb.	4.00	@

New York Quotations

January 25, 1927

Acids

Acetic 28% (bbls.)	100 lbs.	$3.63	@
glacial (carboys)	100 lbs.	12.66	@
Oleic	lb.	.09½	@ .09¾
Stearic	lb.	.14	@ .14¼
Sulphuric, 66%	100 lbs.	1.60	@

Alkalies

Caustic soda, solid	lb.	.03	@
Sulphite soda	100 lbs.	3.50	@

Anti-Oxidants

Age-Rite	lb.	.85	@ .90
Antox	lb.	.83	@
V. G. B.	lb.	.66	@

Colors

BLACK			
Bone	lb.	.07	@ 16
Carbon (see Comp. Ing.)			
A. & W. nonfli No. 1	lb.	.40	@
No. 2	lb.	.25	@
Drop	lb.	.06	@ .10
Lampblack (commercial)	lb.	.09	@
BLUE			
A. & W. blue	lb.	1.25	@ 5.00
Du Pont, N.	100 lbs.	1.35	@
Marine, A. C.	100 lbs.	1.50	@
5 R	100 lbs.	1.00	@
2 G	100 lbs.	.90	@
Prussian	lb.	.33	@ .35
Ultramarine	lb.	.09	@ .25
BROWN			
Sienna, Italian	lb.	.05	@
Umber, Turkey	lb.	.04	@
GREEN			
A. & W. green	lb.	1.25	@ 3.00
Chrome, light	lb.	.27	@
medium	lb.	.29	@
dark	lb.	.31	@
Du Pont, A. C.	100 lbs.	1.20	@
4 G	100 lbs.	3.00	@
G. L.	100 lbs.	.30	@
Y. L.	100 lbs.	.75	@
Oxide of chromium	lb.	.38	@
ORANGE			
Du Pont, 2 R	100 lbs.	1.40	@
R. X.	100 lbs.	1.30	@
Y. O.	100 lbs.	1.60	@
RED			
A. & W. red	lb.	.75	@ 3.50
purple	lb.	2.00	@ 4.00
Antimony, golden, No. 40	lb.	.22	@ .25
No. 60	lb.	.16	@ .20
golden 15/17%	lb.	.20	@
T. K. "Special" 1%	lb.	.38	@
Pentasulphide 15/17%	lb.	.16	@ .20

Colors—*(Continued)*

RED—*(Continued)*			
Antimony,			
Crimson, R.M.P. No. 3	lb.	$0.48	@
Sulphur free	lb.	.52	@
T. K. 15/17%	lb.	.40	@
Sulphur free	lb.	.50	@
7-A	lb	.35	@
Z-2	lb	.20	@
Vermilion, No. 5	lb.	.50	@ .55
No. 15	lb.	.37½	@ .42
Du Pont R. I.	100 lbs.	2.00	@
6 B.	100 lbs.	1.60	@
4 B L.	100 lbs.	.60	@
Brilliant A. C.	100 lbs.	1.20	@
Iron Oxides			
bright red pure domestic	lb.	.12	@
bright red pure English	lb.	.14	@
bright red red, English	lb.	.13	@
bright red red, domestic	lb.	.10	@
Indian (maroon), red pure domestic	lb.	.11	@
Indian (maroon), red pure English	lb.	.12	@
Indian (maroon), red reduced English	lb.	.09¾	@
Indian (maroon), red reduced domestic	lb.	.08	@
Oximony	lb.	.13¼	@
Spanish red oxide	lb.	.04	@
Venetian reds	lb.	.02	@ .06
Vermilion, English quicksilver	lb.	1.62	@
WHITE			
Albalith	lb.*		@
Lithopone	lb.	.05½	@
Azolith	lb.	.05¼	@ .05¾
Grasselli	lb.	.05¾	@ .05¾
Sterling	lb.	.05¾	@ .06⅛
Zinc Oxide			
AAA (lead free)	lb.	.07¼	@ .07¾
Azo (factory):			
ZZZ (lead free)	lb.	.06½	@ .07
ZZ (5% leaded)	lb.	.06¾	@ .07¼
Z (8% leaded)	lb	.06¾	@ .07¼
French Process			
Green seal	lb.	.10⅞	@
Red seal	lb.	.09⅞	@
White seal	lb.	.11⅞	@
Horse Head Brands			
Selected	lb.*		@
Special	lb.*		@
XX red	lb.*		@
Palmerton Process			
Kadox, black	lb.*		@
blue	lb.*		@
red	lb.*		@

* Prices on application.

Colors—(Continued)

WHITE—Continued

Leaded Brands		
Lehigh ..... lb.*		@
Standard ..... lb.*		@
Sterling ..... lb.*		@
Superior ..... lb.*		@

* Prices on application.

YELLOW

A. & W. yellow ..... lb.	$2.00	@$4.00
T. K. Sulphide ..... lb.	.65	@
Cadmium sulphide ..... lb.	1.50	@
Chrome ..... lb.	.17	@ .18
Du Pont N. ..... 100 lbs.	4.00	@
R. R. ..... 100 lbs.	1.55	@
Grasselli cadmium ..... lb.	1.50	@
Ochre, domestic ..... lb.	.01¼	@ .02
imported ..... lb.	.04½	@ .04½
Oxide, pure ..... lb.	.11	@
Zinc imp. ..... lb.	.24	@

Compounding Ingredients

Aluminum flake (sacks e.l.) ..ton	21.85	@
(sacks l.c.l.) ..... ton	24.50	@
Silicate ..... ton	18.00	@24.00
Ammonium carbonate powd. .lb.	.12	@
lump ..... lb.	.11	@
Asbestine ..... ton	13.50	@14.50
Barium, carbonate ..... ton	50.00	@55.00
dust ..... lb.	.05	@ .06
sulphate ..... lb.	.04	@
Barytes, imported ..... ton	30.00	@
water ground and floated..ton	23.00	@25.00
Basofor ..... lb.	.04½	@
Blanc fixe, dry ..... ton	85.00	@90.00
pulp ..... ton	60.00	@63.00
Carbon Black		
Aerfloted arrow ..... lb.	.09	@ .13
Compressed ..... lb.	.07½	@ .11½
Uncompressed ..... lb.	.07	@ .11
Micronex ..... lb.	.08	@ .12
Velvetex ..... lb.	.04	@ .07
Carrara filler ..... lb.	.01½	@
Chalk ..... ton	18.00	@20.00
Clay, Blue Ridge, dark ....ton	9.00	@
light ..... ton	12.00	@
China ..... lb.	.01½	@
Dixie ..... ton	15.00	@
Langford ..... ton	12.00	@
Mineral flour (Florida) .ton	20.00	@23.00
Perfection ..... ton	16.00	@27.00
Suprex ..... ton	13.00	@26.00
Cotton flock, black ..... lb.	.11	@ .12
light-colored ..... lb.	.12	@ .14
white ..... lb.	.13½	@ .27
Fossil flour ..... lb.	.02½	@
Glue, high grade ..... lb.	.16	@ .23
medium ..... lb.	.16	@ .17
low grade ..... lb.	.13	@ .14
Infusorial earth ..... lb.	.02½	@
Mica, amber (fact'y) ..... lb.	.05	@
Pumice stone, powd. ..... lb.	.02½	@ .04

New York Quotations

January 25, 1927

Compounding Ingredients—(Continued)

Rotten stone (bbls.) ..... lb.	$0.02½	@$0.04½
Slate flour (fact'y c. l.) ...ton		@
Soap bark ..... lb.	.11	@ .11½
Soapstone ..... ton	15.00	@22.00
Sodium bicarb ..... 100 lbs.	2.00	@ 2.41
Starch, powd. corn		
Buffalo ..... (bbls.) 100 lbs.	3.49	@ 3.59
Buffalo ..... (bags) 100 lbs.	3.22	@ 3.32
Stearex ..... lb.	.12	@ .14
Talc, domestic ..... lb.	.01½	@
French ..... ton	18.00	@22.00
Terre blanche ..... ton	25.00	@
Thermatomic carbon ..... lb.	.05	@
Whiting:		
Commercial ..... 100 lbs.	.85	@ 1.00
English, cliffstone ....100 lbs.	1.50	@
Quaker ..... ton	13.00	@
Snow white ..... ton	12.00	@23.00
Sussex ..... ton	8.00	@
Westminster Brand..100 lbs.		@
Witco (c.l.) (fact'y) ...ton	12.00	@20.00
Whiting, imp. chalk..100 lbs.	.90	@ 1.00
Paris White, Eng. Cliff.100 lbs.	1.50	@ 2.50
Wood flour ..... ton	40.00	@
XXX (fact'y) ..... ton	35.00	@
X (fact'y) ..... ton	25.00	@

Mineral Rubber

Genasco (facty.) ..... ton	50.00	@52.00
Gilsonite (fact'y) ..... ton	37.14	@39.65
Granulated M. R. ..... ton	33.00	@38.00
Hydrocarbon, hard ..... ton	28.00	@34.00
Hydrocarbon, soft ..... ton	28.00	@34.00
Ohmlac Kapack, M. R. ..... ton	60.00	@
M-4 ..... ton	175.00	@
320/340 m. p. hydrocarbon .ton	33.00	@36.00
300/310 m. p. hydrocarbon .ton	33.00	@36.00
Paradura (fact'y) ..... ton	62.50	@65.00
Pioneer, M. R., solid (fac.) .ton	42.00	@44.00
M. R. granulated ..... ton	52.00	@54.00
Robertson, M. R. solid (facty.) ..... ton	34.00	@80.00
M. R. gran. (facty.) ...ton	34.00	@80.00

Oils (Softeners)

Castor, No. 1, U. S. P. ..... lb.	.14	@
No. 3, U. S. P. ..... lb.	.13½	@
Corn, crude (bbls.) ..... lb.		@
Cotton ..... lb.	.08	@ .09
Fluxrite fluid ..... lb.	.05	@ .06
solid ..... lb.	.05	@ .06
Glycerine ..... lb.	.30	@ .31
Linseed, raw ..... lb.	.11	@
Liquid flux ..... lb.	.09	@ .12
Palm lagos ..... lb.	.08	@
niger ..... lb.	.07½	@
Peanut, crude ..... lb.	.11	@
refined ..... lb.	.13	@
Petrolatum, standard ..... lb.	.06	@ .08
sticky ..... lb.	.08	@ .10
Petroline ..... lb.	.04	@
Pine, steam distilled ..... gal.	.72	@
Plastone ..... lb	.39	@
Rapeseed, refined ..... lb.	.11	@
Rosin ..... gal.	.90	@
Synthecite ..... lb.	.05	@
Tar ..... gal.	.50	@
Virol ..... lb.	.09	@ .10

Resins and Pitches

Pitch ..... bbl.	$9.00	@$10.00
Pine tar, retort ..... bbl.	18.00	@
Ponto ..... lb.		@
Rosin, K (bbl.) ..... 280 lbs.	15.00	@
strained (bbl.) ..... 280 lbs.	12.50	@
Shellac, fine orange ..... lb.	.70	@
Tar, kiln ..... bbl.	17.00	@

Solvents

Benzol (90%, 7.21 lbs. gal.) pure ..... gal.	.29	@
Carbon bisulphide (10.81 lbs. gal.) 99.9% pure (drums) lb.	.05½	@ .06¼
tetrachloride (13.28 lbs. gal.) 99.7% pure (drums) .. lb.	.07½	@ .08
Gasoline No. 303		
Tankcars ..... gal.	.19½	@
Drums, c. l. ..... gal.	.23½	@
Drums, l. c. l. ..... gal.	.25½	@
Naphtha		
68° Bé., 112°, 324° ... gal.	.20	@
70° Bé., 114°, 314° ... gal.	.20½	@
71° Bé., 112°, 304° ... gal.	.21	@
Turpentine, spirits ..... gal.	.83	@
wood, steam distilled ... gal.	.77	@

Substitutes

Black ..... lb.	.08	@ .14
Brown ..... lb.	.08	@ .15
White ..... lb.	.09	@ .17

Vulcanizing Ingredients

Sulphur		
refined ..... 100 lbs.	2.95	@ 3.50
Soft rubber (c.l.) ....100 lbs.	2.60	@ 2.95
(l.c.l.) ..... 100 lbs.	2.95	@ 3.30
Superfine flour (c.l.) ..... lb.	2.20	@ 2.90
(l.c.l.) ..... lb.	2.80	@ 3.10
Tire brand, superfine. 100 lbs.	2.20	@ 2.55
Tube brand, velvet. .100 lbs.	2.60	@ 2.95

(See also Colors—Antimony)

Waxes

Wax, beeswax, white, com. .lb.	.55	@
carnauba ..... lb.	.38	@ .80
ceresine white ..... lb.	.13	@
montan ..... lb.	.07	@ .07½
ozokerite, black ..... lb.	.30	@
green ..... lb.	.32	@

Paraffin

122/124 white crude scale. lb.	.0575	@
124/126 white crude scale. lb.	.0485	@
123/125 fully refined ..... lb.	.05¾	@ .05¾
125/127 fully refined ..... lb.	.05¾	@ .06

YELLOW INK FOR MARKING RUBBER TENSILE STRIPS

Clifton G. Cashion[1]

The need of a light colored ink for marking tensile and other test strips has long been felt by many rubber physical testing laboratories. A satisfactory ink may easily be prepared by any testing laboratory as follows:

A soluble lead compound is precipitated as insoluble yellow lead chromate by the addition of potassium chromate. The solution containing the precipitate is boiled and then filtered. After filtering and before entirely dry the lead chromate is ground into glycerol. The proper consistency of the ink is best determined by practice.

This ink is used with a blank pad obtained at stationery supply houses. The pad is covered with the ink and dampened with glycerol as it dries. The right degree of dampness of the ink must be learned by experience, as a too wet or too dry ink will not give clean lines or the lines will be too broad for efficient work. It will be necessary to clean the markers often, if they are to give clear, clean-cut lines. Especially in stress-strain work a blurry line tends to throw the elongation a large percentage off the correct reading.

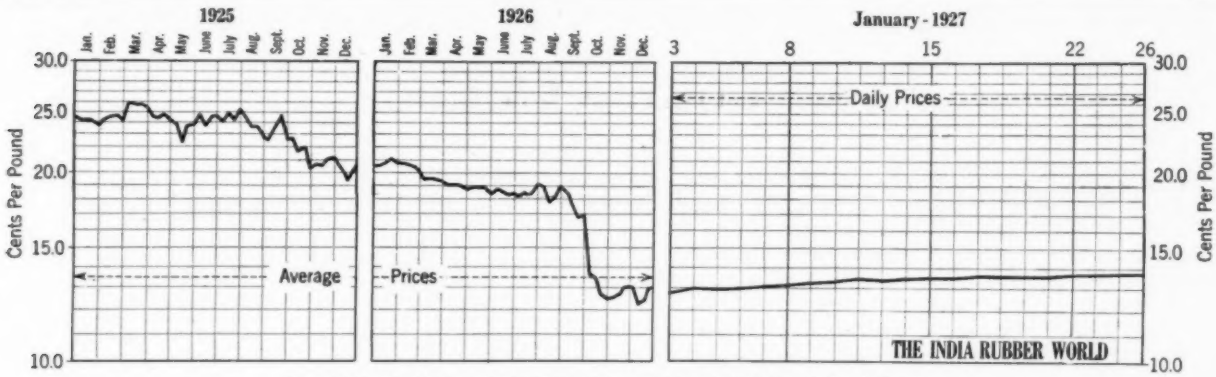
This ink is especially valuable in working with black treads, both new and aged, as they have a tendency to absorb the aniline inks as soon as the rubber has stretched several hundred per cent. The use of this ink entirely eliminates the loss of stress-strain determinations due to the elongation lines becoming invisible while stretching.

In aging work, where the dimensions are marked previous to aging, this ink is valuable as it is permanent in the life oven. It is also permanent to a very high degree in water, steam, and fire.—*Industrial & Engineering Chemistry.*

[1]Philadelphia Rubber Works Co., Akron, Ohio.

DURING 1926 THE AMOUNT OF CRUDE RUBBER USED IN THE manufacture of tires totaled 712,981,000 pounds, the cotton fabric needed for the same purpose reaching 227,512,000 pounds.

THE WORLD REGISTRATION FOR 1926 OF MOTOR VEHICLES IS ESTIMated by the National Automobile Chamber of Commerce at 27,500,000. The total figure for the United States is 22,330,000 motor vehicles, or 81 per cent of the entire world registration.



Ratio Graph of New York Daily Prices of Spot Middling Upland Cotton

The Market for Cotton and Fabrics

New York

AMERICAN COTTON. The cotton market of the past month was listless and speculative. Spot middlings ranged moderately upward. On January 3 it was 12.80 cents and on January 25 13.65 cents. The current advance, begun early in December, is relatively small and the price is still under that at which cotton can be raised without loss to the producer. The matter of the acreage for the next crop has an important bearing on the market outlook. The ultimate reduction in acreage for the 1927 crop will be influenced by the price factor when the planting season arrives.

EGYPTIAN COTTON. The long staple cotton situation has not shown any recent change of note. Egyptians continue very strong and the market is aided by an increasing demand from spinners. This has appeared since the first of the year. Stocks are large, particularly low grade Sakels, which should eventually result in a break in the basis on the less desirable cottons.

Egyptian cotton is quoted c.i.f. Boston for February-March shipment as follows: Medium Sakellaridis, 26⅞ cents, up ½ cent; Medium Uppers, 19¾ cents, up ⅜ cents from January 12.

ARIZONA COTTON. The Pima crop is being rapidly cleaned up and there will be but very little more high grade Pima cotton available from now forward.

Cotton Fabrics

DUCKS, DRILLS AND OSNABURGS. The market for mechanical duck has become very active since the first of the year with the trade buying further ahead than usual. Cotton white stock grades are up $15 a bale from the low of last season and tending higher. There is an increasing volume of orders for both forward and nearby deliveries, with prices advancing on cloths. The outstanding fact bearing on this advance in fabrics and cotton is the huge volume of exports of the latter.

RAINCOAT FABRICS. Dealers' reaction to rubberizers' lines for 1927 is resulting in stimulated demand for goods which is expected to rapidly increase.

SHEETINGS. Prices have been advancing and this tendency is expected to continue in an orderly way. Buying has been general and commitments have extended up to the end of the first six months of the year.

TIRE FABRICS. The month in tire fabrics opened with the tire trade seeking to cover further its future needs, even in some instances to the close of the year. Mills, however, were reluctant to deal so far into the future. Inquiries and sales increased as the month advanced. A number of contracts ran into several million pounds. Several large inquiries from Akron plants were pending during the third week of the month when fabric prices were advanced by certain of the mills from 1 to 2 cents a pound. Prices are now 36 to 37 cents a pound for 23/5/3 carded peeler cords at 13 pounds breaking strength bone dry test. Following the advance in price fewer contracts were placed. The situation is more than usually promising and buyers are showing their interest in more active inquiries in anticipation of a 70,000,000 tire output forecast for 1927.

New York Quotations

January 25, 1927

Drills		
38-inch 2.00-yard	*yard*	$0.15 @
40-inch 3.47-yard		.08⅞ @
52-inch 1.90-yard		.16¼ @
60-inch 1.52-yard		.20⅛ @
Ducks		
38-inch 2.00-yard	*yard*	.15 @
40-inch 1.47-yard		.20⅛ @
72-inch 16.66-ounce		.36¼ @
72-inch 17.21-ounce		.37½ @
MECHANICAL		
Hose and belting	*pound*	.28 @
Specials		.32 @
TENNIS		
52-inch 1.35-yard	*yard*	.23½ @
Hollands		
DEAD FINISH		
Standard, 36-inch	*yard*	.19½ @
42-inch		.23½ @
FLAT FINISH		
Imperial, 36-inch		.15½ @
40-inch		.17½ @
RED SEAL		
36-inch		.14½ @
40-inch		.15 @
50-inch		.22½ @
GOLD SEAL		
40-inch, No. 72		.19 @
40-inch, No. 80		.20½ @

Osnaburgs		
40-inch 2.35-yard	*yard*	$0.12¾ @
40-inch 2.48-yard		.12⅛ @
40-inch 3.00-yard		.10 @
37-inch 2.42-yard		.12⅛ @
Raincoat Fabrics		
COTTON		
Bombazine 60 x 64	*yard*	.11 @
Bombazine 60 x 48		.10 @
Plaids 60 x 48		.11 @
Plaids 48 x 48		.10 @
Surface prints 60 x 48		.11½ @
Surface prints 64 x 60		.12½ @
Sheetings, 40-inch		
48 x 48, 2.50-yard	*yard*	.10½ @ .10¾
48 x 48, 2.85-yard		.09½ @ .09¾
64 x 68, 3.15-yard		.10¾ @ .10¾
56 x 60, 3.60-yard		.08⅞ @ .09¼
48 x 44 3.75-yard		.07⅜ @ .07¾
Sheetings, 36-inch		
48 x 48, 5.00-yard	*yard*	.06½ @ .06⅜
44 x 40, 6.15-yard		.05 @ .05⅛

Tire Fabrics		
SQUARE WOVEN 17¼-ounce		
Egyptian, karded	*pound*	@
Peeler, karded		$0.37½ @
CORD 23/5/3		
Egyptian, combed	*pound*	@
Egyptian, karded		@
Peeler karded, 1⅛-in.		.37 @
CORD 23/4/3		
Peeler, karded	*pound*	.38½ @
CORD 23/3/3		
Peeler, karded	*pound*	@
CORD 15/3/3		
Peeler, karded	*pound*	.35 @
CORD 13/3/3		
Peeler, karded	*pound*	.34 @
LENO BREAKER		
8-oz. Peeler, karded	*pound*	.37½ @
10-oz. Peeler, karded		.37½ @
CHAFER		
8.25-oz. Peeler, karded (2 ply)	*pound*	.40 @
9.5-oz. Peeler, karded (4-ply)		.45 @
12-oz. Peeler, karded		.43 @
14-oz. Peeler, karded		.36½ @

The Cotton Outlook

THOSE associated with the cotton industry are finding it natural at the beginning of the new year to review past conditions in the trade and to make plans and predictions for the future, a future which is easier to face as elements of unexpected strength in the raw cotton situation are beginning steadily to develop. Cotton farmers and factors are now apparently well over their panic, and are holding their better grades for higher prices. Some are prepared to hold their cotton in warehouses for a year or two, so certain are they that the grades they own will be called for. There is a larger foreign demand for the better grades of cotton, conspicuously so in the case of Japanese interests, while cotton prices during the last few weeks have shown in general a decided tendency to firm up. The Garside Cotton Service makes the following encouraging statement, saying in part:

World consumption of American cotton, exclusive of linters, in the current season may exceed that of last season by 1,000,000 to 1,500,000 bales, making the total consumption this season 15,000,000 to 15,500,000. During the season to date, consumption has run higher than last season in the United States, in Europe and Japan, but has been less than last season in England.

In the four months to the end of November, this country used about 200,000 more bales of American cotton than in the same period last season. If it maintained this rate of increase, its consumption this season would be 600,000 bales more than last season.

Samuel T. Hubbard, Jr., president of the New York Cotton Exchange, also says:

Larger consumption and better values should be the rule in cotton during 1927, due to a wider use of the product on account of its low price, a sharp cut in the acreage to be planted next year, and heavy buying for future use by merchants and manufacturers. . . .

The cotton trade of the world never lives in the past, but always is looking forward to the future. We have passed through our period of stress and strain, disappointment and financial losses, and we are now called on to look forward to the future.

History shows that a period of two or three years of overproduction is inevitably followed by a tremendously sharp cut in the acreage, and usually a moderate if not a small crop with an advance in the value of both cotton and cotton goods. This, in spite of the fact that there may be and probably is to be a very large carryover of the raw material this year. This carryover, however, will be distributed at low prices to merchants and manufacturers.

Present Method of Classifying Cotton to Be Unchanged

Following a conference on January 10 with leading representatives of the cotton industry, the Department of Agriculture announced that there would be no change in the present method of classifying cotton, it being considered that the system now in use is the most practical under existing conditions. The announcement is in part as follows:

Cotton of all grades and qualities will be dealt with by the boards of cotton examiners of the Department of Agriculture according to the merits of each individual bale, which will be classified in accordance with the official standards for grade and color and length of staple. . . .

Following the terms of the law, any such cotton will be classified, for the purposes of the cotton futures act, as tenderable on future contracts if it is at least seven-eighths of an inch in staple length, and if it is not below the grade of low middling or below any of the other specified minimum grades, if it is not reduced in value below middling because of the presence of extraneous matter of any character or irregularities or defects, and it is not of perished staple, or of immature staple, or gin-cut, reginned, repacked, false packed, mixed packed or water packed. Any cotton which does not meet these minimum requirements must necessarily be treated as untenderable.

President of N. A. C. M. Urges Cooperative Marketing

As one of the speakers at the recent annual banquet of the Rhode Island Textile Association, William B. McColl, president of the National Association of Cotton Manufacturers, referred in the course of his remarks to some of the benefits to be gained from cooperative marketing, saying in part:

There are many hopeful and encouraging signs that augur well for the industry. Cotton now has reached a level that precludes any further drastic reduction in price. The present cotton level should stimulate considerable increase in the use of cotton cloth. There is approximately only one month's supply ahead of production. A slightly increased demand might very quickly change the present unprofitable condition to one of considerable activity in many mills. . . .

I have made reference to the fact that the Government permits cooperative agricultural marketing. Cotton growers are learning the benefits of this method of distribution. If we want low priced cotton—and I firmly believe it is for the best interest of the textile industry—the present basis should be maintained. The lower in price an article can be produced, the greater the demand for it is likely to be. If the farmers cannot raise cotton profitably on a 12-cent level, they should learn how it can be done. The growers must modernize their methods of farming, increase production per acre and improve the quality. This is their problem.

It now behooves us to forget the disastrous period that we have passed through and to face the future with renewed hope and confidence.

Jones Bill Is Adopted

Without opposition the bill introduced by Representative Jones of Texas regarding the reduction of the number of cotton reports was adopted by the House on January 17. Under the new order the Department of Agriculture will issue production estimates on only the first day of September, October, November, and December. The bill does not disturb the ginning reports now being made by the Census Bureau every two weeks during the growing season. An important feature of the Jones bill requires the department to make a report on the grades of staples of the carryover cotton and also of the cotton production.

The following dealers in cotton goods for the rubber industry are listed in our Buyers' Directory. For complete information see Index to Advertisers on Page 106.

Adams, H. J., Co., The, Akron, Ohio.
Bibb Manufacturing Co., Macon, Georgia.
Brighton Mills, Passaic, New Jersey.
Callaway Mills, Inc., New York, N. Y.
Cannon Mills, Inc., New York, N. Y.
Curran & Barry, New York, N. Y.
Lane, J. H. & Co., New York, N. Y., and Chicago, Illinois.
Lawrence & Co., New York, N. Y.
Willingham Cotton Mills, Macon, Georgia.

United Kingdom Rubber Statistics

Imports

UNMANUFACTURED Crude rubber From—	November, 1926 Pounds	November, 1926 Value	Eleven Months Ended November, 1926 Pounds	Eleven Months Ended November, 1926 Value
Straits Settlements	12,490,200	£1,042,265	122,303,800	£12,761,301
Federated Malay States	6,953,100	569,269	57,508,000	5,793,769
British India	527,400	44,128	9,447,000	1,086,522
Ceylon and Dependencies	4,873,500	403,603	40,569,900	4,192,013
Other Dutch possessions in Indian Seas	2,412,400	202,341	17,790,400	1,776,480
Dutch East Indies (except other Dutch possessions in Indian Seas)	1,628,600	137,624	27,258,900	2,754,865
Other countries in East Indies and Pacific, not elsewhere specified	39,300	3,722	1,876,400	193,947
Brazil	713,200	51,947	8,654,200	907,452
Peru	.....	.....	102,000	8,576
South and Central America (except Brazil and Peru)	16,000	1,323	363,300	33,704
West Africa:				
French West Africa	44,800	2,800	1,421,800	123,763
Gold Coast	34,000	2,728	893,200	62,029
Other parts of West Africa	132,000	10,219	1,766,800	159,303
East Africa, including Madagascar	128,200	10,537	1,466,400	141,450
Other countries	66,200	4,123	1,344,100	150,865
Totals	30,058,900	£2,486,629	292,766,200	£30,146,039
Waste and reclaimed rubber	558,000	£8,721	6,079,400	£100,667
Gutta percha and balata	641,600	69,751	7,405,400	941,637
Rubber substitutes	33,200	1,125	244,500	15,770
Totals	1,232,800	£79,597	13,729,300	£1,058,074
MANUFACTURED				
Boots and shoes..*doz. pairs*	31,388	£98,635	429,678	£1,076,431
Tires and tubes				
Pneumatic				
Outer covers	.....	280,282	.....	3,559,989
Inner tubes	.....	26,588	.....	531,880
Solid tires	.....	26,187	.....	283,404
Other rubber manufactures	.....	145,500	.....	1,488,494
Totals	.....	£577,192	.....	£6,940,198

Exports

UNMANUFACTURED				
Waste and reclaimed rubber	2,674,000	£25,945	21,005,200	£266,739
Rubber substitutes	65,000	1,411	847,800	20,343
Totals	2,739,000	£27,356	21,853,000	£287,082
MANUFACTURED				
Boots and shoes..*doz. pairs*	18,690	£39,391	213,576	£361,968
Tires and tubes				
Pneumatic				
Outer covers	.....	338,715	.....	3,119,577
Inner tubes	.....	58,698	.....	648,706
Solid tires	.....	39,003	.....	409,280
Other rubber manufactures	.....	254,467	.....	2,805,049
Totals	.....	£730,274	.....	£7,344,580

Exports—Colonial and Foreign

UNMANUFACTURED.				
Crude rubber From—				
Russia	1,272,900	£212,794	13,004,100	£2,333,020
Sweden, Norway and Denmark	348,200	38,722	2,254,800	282,259
Germany	2,831,800	245,065	15,702,700	1,593,636
Belgium	236,200	19,100	2,693,400	286,113
France	1,502,800	129,992	19,027,700	2,301,169
Spain	52,900	4,064	728,500	95,982
Italy	20,800	2,046	5,029,800	728,230
Other European countries	189,900	18,203	2,223,800	239,464
United States	2,799,500	232,711	51,517,800	6,612,919
Canada	1,500	128	303,200	46,669
Other countries	88,800	9,385	817,700	104,006
Totals	9,345,300	£912,210	113,303,500	£14,623,467
Waste and reclaimed rubber	23,300	£585	213,000	£5,875
Gutta percha and balata	61,400	5,510	465,500	62,869
Rubber substitutes	.....	.....	2,200	60
Totals	84,700	£6,095	680,700	£68,804
MANUFACTURED				
Boots and shoes...*doz. pairs*	1,009	£3,386	7,912	£23,422
Tires and tubes				
Pneumatic				
Outer covers	.....	148,283	.....	516,629
Inner tubes	.....	5,295	.....	56,386
Solid tires	.....	799	.....	13,304
Other rubber manufactures	.....	9,500	.....	77,116
Totals	.....	£167,263	.....	£686,857

Dominion of Canada Rubber Statistics

Imports of Crude and Manufactured Rubber

UNMANUFACTURED	October, 1926 Pounds	October, 1926 Value	Seven Months Ended October, 1926 Pounds	Seven Months Ended October, 1926 Value
Rubber, gutta percha, etc.				
From United Kingdom	56,000	$20,032	59,357	$21,603
United States	3,717,766	1,667,461	21,828,492	10,574,214
Straits Settlements	398,732	148,717	1,906,940	843,318
Dutch East Indies	4,684	1,889	189,273	99,247
Other countries	.....	.....	11,200	15,600
Totals	4,177,182	$1,838,099	23,995,262	$11,553,982
Rubber, recovered	658,651	$69,507	4,299,354	$521,864
Rubber, powdered and rubber or gutta percha scrap	633,528	34,093	4,374,093	238,514
Balata	.....	.....	6,000	3,968
Rubber substitutes	112,478	14,150	496,990	59,623
Totals	1,404,657	$117,750	9,176,437	$823,969
PARTLY MANUFACTURED				
Hard rubber sheets and rods	9,328	$6,105	73,918	$41,510
Hard rubber tubes	.....	1,513	.....	4,732
Rubber thread not covered	20,683	30,422	76,547	124,044
Totals	30,011	$38,040	150,465	$170,286
MANUFACTURED				
Belting	.....	$11,898	.....	$143,643
Hose	.....	12,323	.....	103,500
Packing	.....	3,726	.....	27,833
Boots and shoes.....*pairs*	13,404	22,275	27,212	45,277
Clothing, including waterproofed	.....	24,749	.....	138,685
Gloves	.....	1,696	.....	12,595
Hot water bottles	.....	4,513	.....	11,348
Tires, solid.....*number*	32	3,161	449	25,837
Tires, pneumatic.....*number*	1,024	23,991	31,447	209,411
Tires, tubes.....*number*	1,547	5,044	11,086	27,741
Elastic, round and flat	.....	16,989	.....	109,857
Mats and matting	.....	3,850	.....	29,867
Cement	.....	9,169	.....	58,440
Golf balls.....*dozen*	1,309	5,515	34,063	138,826
Heels, rubber.....*pairs*	32,443	1,644	150,668	9,412
Other rubber manufactures	.....	98,563	.....	780,390
Totals	.....	$249,106	.....	$1,872,662
Totals, rubber imports	.....	$2,242,995	.....	$14,420,899

Exports of Domestic and Foreign Rubber Goods

UNMANUFACTURED	October, 1926 Produce of Canada Value	October, 1926 Re-exports of Foreign Goods Value	Seven Months Ended October, 1926 Produce of Canada Value	Seven Months Ended October, 1926 Re-exports of Foreign Goods Value
Crude and waste rubber	$31,806	.....	$164,787	.....
Totals	$31,806	.....	$164,787	.....
MANUFACTURED				
Belting	$43,672	.....	$321,364	.....
Canvas shoes with rubber soles	350,485	.....	2,533,700	.....
Boots and shoes	436,063	.....	1,739,316	.....
Clothing, including waterproofed	1,578	.....	15,286	.....
Hose	25,471	.....	156,929	.....
Tires, casings	984,580	.....	7,953,873	.....
Inner tubes	161,660	.....	1,330,467	.....
Solid	17,296	.....	141,652	.....
Other rubber manufactures	56,047	$5,857	330,618	$83,326
Totals	$2,076,852	$5,857	$14,523,205	$83,326
Totals, rubber exports	$2,108,658	$5,857	14,687,992	$83,326

Landings, Deliveries and Stocks in London and Liverpool as Returned by the Warehouses and Wharves During the Month of November, 1926

	Landed for November Tons	Delivered for November Tons	Stocks, November 30th 1926 Tons	1925 Tons	1924 Tons
LONDON					
Plantation	9,755	7,838	43,879	3,747	33,463
Other grades	18	28	103	33	94
LIVERPOOL					
Plantation	†360	†313	†1,515	†466	†2,881
Pará and Peruvian	288	206	472	267	81
Other grades	.....	.....	.....	18	111
Total Tons, London and Liverpool	10,421	8,385	45,969	4,531	36,630

†Official returns from the six recognized public warehouses.

Crude Rubber Arrivals at New York as Reported by Importers

Parás and Caucho

	Fine Cases	Medium Cases	Coarse Cases	Caucho Cases	Cametá Cases
DECEMBER 17. By "Sheridan," Brazil.					
Paul Bertuch & Co., Inc.	472	...	...	98	...
DECEMBER 28. By "Dunrobin," Far East.					
H. A. Astlett & Co.	168	...	390	32	...
Paul Bertuch & Co., Inc.	320	...	...	...	...
General Rubber Co.	816	...	260	28	52
Littlejohn & Co., Inc.	645	33	128	24	...
Meyer & Brown, Inc.	160	...	30	...	...
Peel & Kelly, Inc.	62	...	...	...	...
Peel & Kelly, Inc. bales	...	1752	...	...	...
JANUARY 11. By "Francis," Far East.					
H. A. Astlett & Co.	319	...	150	11	...
Paul Bertuch & Co., Inc.	1,165	...	...	...	...
General Rubber Co.	1,802	74	334	299	35
Littlejohn & Co., Inc.	1,907	79	380	77	...
Meyer & Brown, Inc.	93	1	12	...	...
Peel & Kelly, Inc.	62	...	...	...	...

Plantations

	Cases
DECEMBER 15. By "Tosari," Far East.	
Hood Rubber Co.	*218
H. Muehlstein & Co., Inc.	150
DECEMBER 16. By "Cedarbank," Far East.	
H. Muehlstein & Co., Inc.	414
DECEMBER 16. By "City of Bath," Far East.	
H. Muehlstein & Co., Inc.	201
DECEMBER 17. By "Olivebank," Far East.	
H. A. Astlett & Co.	248
General Rubber Co.	70
Haldane Bierrie & Co., Inc.	400
Hood Rubber Co.	*128
Littlejohn & Co., Inc.	576
Meyer & Brown, Inc.	56
Peel & Kelly, Inc.	297
Chas. T. Wilson Co., Inc.	481
DECEMBER 17. By "Waukegan," Havre.	
Littlejohn & Co., Inc.	202
DECEMBER 18. By "Pres. Monroe," Far East.	
H. A. Astlett & Co.	822
Paul Bertuch & Co., Inc.	296
General Rubber Co.	3,325
Haldane Bierrie & Co., Inc.	220
Hood Rubber Co.	*290
Littlejohn & Co., Inc.	4,621
Meyer & Brown, Inc.	576
Meyer & Brown, Inc.	*250
H. Muehlstein & Co., Inc.	330
Peel & Kelly, Inc.	360
Raw Products Co.	50
Rogers Brown & Crocker Bros., Inc.	420
Chas. T. Wilson Co., Inc.	468
DECEMBER 18. By "Pres. Van Buren," Far East.	
General Rubber Co.	48
DECEMBER 20. By "Asconia," London.	
Peel & Kelly, Inc.	282
Chas. T. Wilson Co., Inc.	183
DECEMBER 20. By "Franconia," Liverpool.	
Peel & Kelly, Inc.	75
Chas. T. Wilson Co., Inc.	29
DECEMBER 20. By "Malakand," Far East.	
General Rubber Co.	2,560
Haldane Bierrie & Co., Inc.	100
Meyer & Brown, Inc.	730
Peel & Kelly, Inc.	*66
Peel & Kelly, Inc.	84
Chas. T. Wilson Co., Inc.	525
DECEMBER 20. By "Westerdyk," Far East.	
General Rubber Co.	270
Raw Products Co.	50
DECEMBER 21. By "American Trader," London.	
General Rubber Co.	50
Haldane Bierrie & Co., Inc.	30
Littlejohn & Co., Inc.	25
Peel & Kelly, Inc.	159
DECEMBER 22. By "Pres. Pierce," Far East	
H. A. Astlett & Co.	†150
DECEMBER 26. By "Minnewaska," London.	
H. A. Astlett & Co.	69
General Rubber Co.	50
Littlejohn & Co., Inc.	216
Rogers Brown & Crocker Bros., Inc.	150
DECEMBER 27. By "Noordam," Rotterdam.	
General Rubber Co.	991
Littlejohn & Co., Inc.	32
DECEMBER 28. By "American Merchant," London.	
Chas. T. Wilson Co., Inc.	241
DECEMBER 28. By "City of Bombay," Far East.	
H. A. Astlett & Co.	177
Littlejohn & Co., Inc.	158
H. Muehlstein & Co., Inc.	48
Peel & Kelly, Inc.	14
DECEMBER 28. By "Samaria," London.	
Chas. T. Wilson Co., Inc.	10
DECEMBER 29. By "Caracoli," Bordeaux.	
H. Muehlstein & Co., Inc.	192
DECEMBER 29. By "Teucer," Far East.	
H. A. Astlett & Co.	1,700
Baird Rubber & Trading Co., Inc.	1,147
General Rubber Co.	6,272
Haldane Bierrie & Co., Inc.	470
Hood Rubber Co.	*540
Littlejohn & Co., Inc.	7,463
Meyer & Brown, Inc.	1,888
H. Muehlstein & Co., Inc.	320
Peel & Kelly, Inc.	*298
Peel & Kelly, Inc.	1,438
Raw Products Co.	51
Rogers Brown & Crocker Bros., Inc.	1,386
Chas. T. Wilson Co., Inc.	532
JANUARY 2. By "Burgerdyk," Rotterdam.	
General Rubber Co.	73
JANUARY 2. By "Fenniand," Far East.	
H. A. Astlett & Co.	52
JANUARY 2. By "West Prospect," Far East.	
Peel & Kelly, Inc.	†135
JANUARY 3. By "American Farmer," London.	
H. A. Astlett & Co.	184
Baird Rubber & Trading Co., Inc.	141
Littlejohn & Co., Inc.	500
Peel & Kelly, Inc.	50
Rogers Brown & Crocker Bros., Inc.	150
Chas. T. Wilson Co., Inc.	139
JANUARY 3. By "Pres. Taft," Far East.	
H. A. Astlett & Co.	150
JANUARY 3. By "Tuscania," London.	
Chas. T. Wilson Co., Inc.	14
JANUARY 5. By "City of Kimberley," Far East.	
H. A. Astlett & Co.	1,832
Baird Rubber & Trading Co., Inc.	1,597
General Rubber Co.	8,181
Haldane Bierrie & Co., Inc.	229
Hood Rubber Co.	*102
Littlejohn & Co., Inc.	7,643
Meyer & Brown, Inc.	1,370
H. Muehlstein & Co., Inc.	343
Peel & Kelly, Inc.	2,180
Peel & Kelly, Inc.	*500
Rogers Brown & Crocker Bros., Inc.	50
Chas. T. Wilson Co., Inc.	368
JANUARY 6. By "City of Yokohama," Far East.	
H. A. Astlett & Co.	150
General Rubber Co.	33
Haldane Bierrie & Co., Inc.	100
Hood Rubber Co.	*218
Littlejohn & Co., Inc.	1,073
Meyer & Brown, Inc.	12
H. Muehlstein & Co., Inc.	372
Peel & Kelly, Inc.	354
Chas. T. Wilson Co., Inc.	693
JANUARY 7. By "Stockwell," Far East	
General Rubber Co.	980
Littlejohn & Co., Inc.	268
Peel & Kelly, Inc.	350
Chas. T. Wilson Co., Inc.	168
JANUARY 9. By "Javanese Prince," Far East.	
H. A. Astlett & Co.	1,044
Baird Rubber & Trading Co., Inc.	3,006
General Rubber Co.	7,007
Haldane Bierrie & Co., Inc.	461
Hood Rubber Co.	*348
Littlejohn & Co., Inc.	8,508
Meyer & Brown, Inc.	2,049
The Meyer & Brown Corporation	360
H. Muehlstein & Co., Inc.	850
Peel & Kelly, Inc.	2,170
Raw Products Co. bales	275
Rogers Brown & Crocker Bros., Inc.	950
Chas. T. Wilson Co., Inc.	1,917
JANUARY 9. By "Kuala Lumpur," Far East.	
General Rubber Co.	2,242
JANUARY 9. By "Montgomery City," Far East.	
H. A. Astlett & Co.	564
General Rubber Co.	4,751
Haldane Bierrie & Co., Inc.	150
Hood Rubber Co.	*439
Littlejohn & Co., Inc.	959
Meyer & Brown, Inc.	280
H. Muehlstein & Co., Inc.	546
Peel & Kelly, Inc.	1,303
Raw Products Co.	334
Chas. T. Wilson Co., Inc.	839
JANUARY 10. By "City of Baroda," Far East.	
H. A. Astlett & Co.	1,435
Baird Rubber & Trading Co., Inc.	2,908
Paul Bertuch & Co., Inc.	262
General Rubber Co.	4,294
Haldane Bierrie & Co., Inc.	1,140
Adolf Hirsch & Co., Inc.	100
Littlejohn & Co., Inc.	9,506
Meyer & Brown, Inc.	1,642
H. Muehlstein & Co., Inc.	520
Peel & Kelly, Inc.	3,589
Rogers Brown & Crocker Bros., Inc.	400
Chas. T. Wilson Co., Inc.	370
JANUARY 13. By "Steel Navigator," Far East.	
H. A. Astlett & Co.	987
Baird Rubber & Trading Co., Inc.	1,054
General Rubber Co.	7,858
Haldane Bierrie & Co., Inc.	103
Littlejohn & Co., Inc.	8,143
Meyer & Brown, Inc.	658
H. Muehlstein & Co., Inc.	497
Peel & Kelly, Inc.	726
Raw Products Co. Bales	330
Rogers Brown & Crocker Bros., Inc.	1,451
Chas. T. Wilson Co., Inc.	341
JANUARY 14. By "Belfast Maru," Far East.	
H. A. Astlett & Co.	321
Baird Rubber & Trading Co., Inc.	920
Littlejohn & Co., Inc.	1,187
Meyer & Brown, Inc.	463
Peel & Kelly, Inc.	553
Rogers Brown & Crocker Bros., Inc.	240
JANUARY 14. By "Kendal Castle," Far East.	
H. A. Astlett & Co.	949
Baird Rubber & Trading Co., Inc.	950
Baird Rubber & Trading Co., Inc.	*100
General Rubber Co.	10,425
Hood Rubber Co.	*152
Littlejohn & Co., Inc.	8,382
Meyer & Brown, Inc.	1,402
Peel & Kelly, Inc.	2,600
Raw Products Co.	635
Chas. T. Wilson Co., Inc.	2,389
JANUARY 14. By "Pres. Van Buren," Far East.	
H. A. Astlett & Co.	1,180
Baird Rubber & Trading Co., Inc.	1,496
Baird Rubber & Trading Co., Inc.	*132
Paul Bertuch & Co., Inc.	185
General Rubber Co.	1,581
Haldane Bierrie & Co., Inc.	400
Hood Rubber Co.	*225
Littlejohn & Co., Inc.	3,593
Meyer & Brown, Inc.	565
The Meyer & Brown Corporation	250
H. Muehlstein & Co., Inc.	512
Peel & Kelly, Inc.	800
Raw Products Co. Bales	110
Rogers Brown & Crocker Bros., Inc.	894

* Arrived at Boston.
† Arrived at Pacific Coast.
‡ Putumayo Block.
¶ Mixed.

Africans

	Cases
DECEMBER 19. By "Franconia," Liverpool.	
Littlejohn & Co., Inc.	22
JANUARY 3. By "La Bourdonnais," Bordeaux.	
Littlejohn & Co., Inc.	590
H. Muehlstein & Co., Inc.	520
JANUARY 12. By "Francis," Brazil.	
General Rubber Co.	55

Balata

	Cases
DECEMBER 17. By "Sheridan," Brazil.	
Paul Bertuch & Co., Inc.	11
DECEMBER 27. By "Dunrobin," Far East.	
H. A. Astlett & Co.	296
DECEMBER 30. By "Prins Fred Hendrik," South America.	
Middleton & Co., Ltd. Bales	35
JANUARY 10. By "Haiti," South America.	
Middleton & Co., Ltd. Bales	34
JANUARY 10. By "Matura," South America.	
Middleton & Co., Ltd. Bales	25
JANUARY 12. By "Francis," Far East.	
H. A. Astlett & Co.	299
General Rubber Co.	111

Guayule

	Cases
DECEMBER 28. By "Mexico," Mexico.	
Continental Rubber Co. of New York	560
JANUARY 16. By "Sutransco," Mexico.	
Continental Rubber Co. of New York	2,180

Rubber Latex

	Gallons
JANUARY 13. By "Steel Navigator," Far East.	
General Rubber Co.	29,611
JANUARY 14. By "Kendal Castle," Far East.	
General Rubber Co.	37,836

British Malaya

Rubber Exports

An official cablegram from Singapore to the Malay States Information Agency, 88 Cannon street, London, E. C. 4, England, states that the amount of rubber exported from British Malaya in the month of December last totaled 36,811 tons. The amount of rubber imported was 14,716 tons, of which 12,049 tons were declared as wet rubber. The following are comparative statistics:

	1925		1926	
	Gross Exports Tons	Foreign Imports Tons	Gross Exports Tons	Foreign Imports Tons
January	19,183	10,132	30,452	10,237
February	21,622	10,071	30,440	8,306
March	26,836	13,399	35,012	14,800
April	22,414	11,750	23,727	10,565
May	26,667	12,979	31,231	10,604
June	27,894	14,706	30,624	11,764
July	24,809	16,192	28,824	15,280
August	27,753	12,025	34,625	13,595
September	29,425	12,913	35,913	13,972
October	28,711	14,986	39,367	15,203
November	31,648	14,904	34,302	12,201
December	29,863	13,964	36,811	14,716
Totals	316,825	158,021	391,328	151,243

Note—The above figures represent the totals compiled from declarations received up to the last day of the month for exports from and imports to all ports of British Malaya and not necessarily the actual quantity shipped or landed during that month.

Distribution

The following is a comparative return of distribution of shipments during the months of November and December, 1926:

	November, 1926 Tons	December, 1926 Tons
United Kingdom	8,059	7,621
United States	21,812	24,406
Continent of Europe	2,498	2,873
British Possessions	819	710
Japan	1,104	1,186
Other foreign countries	10	15
Totals	34,302	36,811

Ceylon Rubber Exports from Jan. 1 to Oct. 31, 1926

	Tons
To United Kingdom	14,728.33
Continent	2,392.42
Australia	750.64
America	29,722.03
Egypt	6.11
Africa	63.47
India	7.32
China	2.46
Japan	117.61
Total	47,790.39

CEYLON ANNUAL EXPORTS, 1920-1925

	Tons
For the same period last year	36,762.07
For the year 1925	45,697.19
1924	37,351.13
1923	37,111.88
1922	47,260.00
1921	40,210.31
1920	38,971.59

Plantation Rubber Exports from Malaya

	January 1 to November 30, 1926		
	From Singapore Tons	From Penang Tons	From Malacca Tons
To United Kingdom	9,769.98	10,940.72	10,014.60
British Possessions	4,257.67	210.78	161.54
Continent of Europe	12,431.76	2,281.45	3,137.23
United States	136,559.37	27,437.20	12,982.43
Japan	11,411.07	2,292.20	2,175.77
Other Countries	103.72	14.50	....
Totals	174,533.57	43,176.85	28,471.57

STANDARD ALLOWANCE OF RUBBER EXPORTS

During 1926 the standard production of crude rubber which might be exported was, according to W. H. Rickinson & Son, 95 5/12 per cent, with rubber averaging 2 shillings a pound. For 1925 the allowance was 67 per cent, when the price averaged 2 shillings 11 pence a pound. Roughly speaking, the increased allowance for 1926 makes up for the decreased price.

United States Rubber Statistics

Imports of Crude and Manufactured Rubber

	October, 1926		Ten Months Ended October, 1926	
UNMANUFACTURED—*Free*	Pounds	Value	Pounds	Value
Crude rubber	65,707,684	$25,300,720	753,283,011	$437,646,067
Balata	67,265	29,172	574,479	243,542
Jelutong or Pontianak	1,438,415	292,243	13,886,815	2,636,180
Gutta percha	127,851	23,215	2,513,337	524,955
Guayule	493,882	116,657	8,433,541	2,273,475
Rubber scrap	2,106,962	76,818	27,855,716	1,271,828
Totals	69,942,059	$25,838,825	806,546,899	$444,596,047
Chicle *dutiable*	647,845	$312,276	10,369,259	$5,149,144
MANUFACTURED—*dutiable*				
Rubber belting	128,107	$55,647	704,436	$443,424
Rubber tires	4,382	31,503	16,578	143,230
Other rubber manufactures of substitutes for rubber	.....	185,762	.....	1,115,286
Totals	132,489	$272,912	721,014	$1,701,940

Exports of Foreign Merchandise

RUBBER AND MANUFACTURES				
Crude rubber	3,059,155	$1,316,270	31,997,091	$19,217,761
Balata	5,463	2,591	352,621	200,676
Gutta percha and rubber substitutes and scrap	50,000	1,250	158,637	29,306
Rubber manufactures	.....	19,865	.....	101,932
Totals	.....	$1,339,976	.....	$19,549,675

Exports of Domestic Merchandise

MANUFACTURED				
India rubber				
Reclaimed	873,059	$104,034	9,535,759	$1,155,618
Scrap and old	2,190,771	158,838	23,379,694	1,508,878
Footwear				
Boots *pairs*	130,854	288,538	759,195	1,807,079
Shoes *pairs*	120,485	136,265	1,269,320	1,224,283
Canvas shoes with rubber soles *pairs*	470,839	307,400	4,854,807	3,551,151
Rubber water bottles and fountain syringes *number*	31,527	21,587	232,330	170,441
Rubber gloves *doz. pairs*	6,215	19,569	5,339	200,660
Other druggists' rubber sundries	.....	38,761	.....	425,240
Bathing caps *dozen*	2,776	8,357	143,618	320,119
Hard rubber goods				
Electrical hard rubber goods	119,212	33,965	636,310	232,496
Other hard rubber goods	.....	36,016	.....	344,109
Tires				
Casings, automobile *number*	105,823	1,588,421	1,191,440	20,288,005
Tubes, automobile *number*	83,687	190,684	924,953	2,530,467
Other casings and tubes *number*	4,175	10,849	60,311	193,061
Solid tires for automobiles and motor trucks *number*	6,439	207,822	80,889	2,901,342
Others	89,229	24,523	1,276,915	432,448
Tire accessories	.....	118,058	.....	1,353,398
Rubber and friction tape	86,927	29,084	873,941	288,432
Belting	297,822	179,280	3,300,662	2,142,130
Hose	377,229	151,565	5,052,889	2,100,574
Packing	162,361	82,701	1,715,258	878,990
Soles and heels	354,692	112,622	3,422,173	1,088,782
Thread	110,475	152,300	1,218,440	1,647,047
Rubber bands and erasers	61,709	48,736	550,057	444,502
Other rubber manufactures	.....	208,884	.....	2,057,521
Totals	.....	$4,258,859	.....	$49,286,773
Rubber toys, balls and balloons	.....	$74,319	.....	$693,371

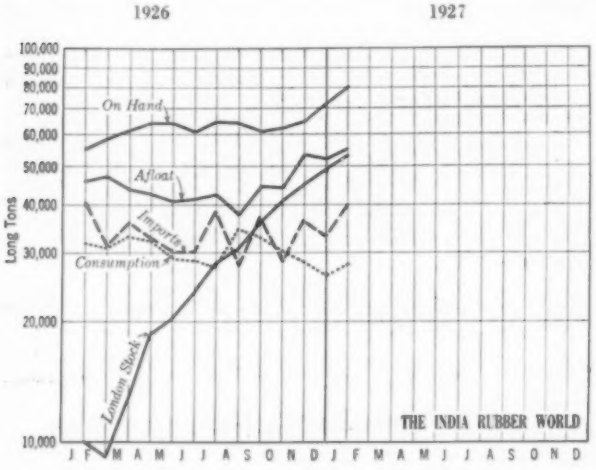
Imports of Crude Rubber Into the United States by Customs Districts

	*November, 1926		Eleven Months Ended *November, 1926	
	Pounds	Value	Pounds	Value
Massachusetts	947,768	$388,809	27,732,757	$17,006,240
Buffalo	.....	.....	46,269	23,834
St. Lawrence	.....	.....	8,335	2,326
New York	80,287,179	32,060,658	782,710,026	438,618,861
Philadelphia	760,334	269,884	1,065,563	363,420
Maryland	1,321,136	480,562	5,121,490	2,788,146
New Orleans	.....	.....	5,427	2,051
Los Angeles	2,740,091	1,043,688	16,239,470	9,477,839
San Francisco	941,230	370,187	3,902,578	1,654,777
Oregon	33,675	11,903	519,455	273,939
Washington	60,000	26,208	1,068,000	688,408
Minnesota	.....	.....	123,200	71,251
Michigan	89,600	33,891	142,111	57,285
Ohio	413,130	159,149	1,503,835	705,786
Colorado	112,000	45,597	1,067,184	811,629
Totals	87,706,143	$34,890,536	841,255,700	$472,545,792

*Including Latex Dry Rubber Content.

Rubber Imports, Consumption, Stocks

The graph below covers completely the rubber supply, consumption and stocks for 1926. The figures for January, 1927, are estimated except the London stocks which are actual. Imports and consumption for the past year ran closely parallel the first 6 months.



U. S. Imports, Consumption, Stocks, 1926-27

During the last half year consumption exhibited a decline averaging 4,400 tons less per month than importations. Consumption for January has assumed a marked upward trend although at a lower level than for January a year ago.

The rate of increase in London stocks was more rapid during March and April than in the balance of the year. From May 1 to December 31 the monthly rate of increase was approximately uniform, averaging 4,240 tons. The net advance in London stocks for 1926 was 42,819 tons. Stocks on January 24 advanced to 53,662 tons. Stocks in the Far East nearly doubled in 1926.

Stocks afloat held above 40,000 tons the entire year except in August when they dropped to 37,400 tons, then rose rapidly from that level to 52,019 tons for December. Stocks afloat in January are estimated at 55,000 tons.

The statistical situation as reported in the table and indicated by the graphs is distinctly favorable to consumers and makes evident the occasion for the application of the more stringent rules of the restriction plan by which production may be curtailed by possibly 100,000 tons in the current year.

UNITED STATES CRUDE RUBBER IMPORTS, CONSUMPTION AND STOCKS

1925	Imports Tons	Consumption Tons	Stocks On Hand† Tons	Stocks Afloat† Tons	London Tons	Singapore and Penang Tons
Twelve months.....	388,000	385,000	51,000*	48,000*	.....	.....
1926						
January	40,500	32,000	55,000	46,300	10,100	15,726†
February	31,000	31,000	58,000	47,000	9,100	13,653
March	36,000	33,000	61,500	43,500	12,800	18,389
April	32,700	32,500	64,400	41,900	18,500	16,328
May	30,000	29,000	64,000	40,300	20,200	16,848
June	30,000	28,600	60,460	40,907	23,800	19,400
July	38,000	27,600	65,000	43,000	27,857	23,000
August	27,800	34,500	64,000	37,400	30,159	23,362
September	36,800	32,900	61,000	44,000	36,065	26,000
October	28,150	29,550	62,100	43,465	41,080	26,600
November	36,342	28,000	64,989	52,928	44,553	25,483
December	32,903	26,295	72,510	52,019	48,948	26,443
Jan. (estimated)....	40,000	28,000	80,000	55,000	‡‡53,662	.....

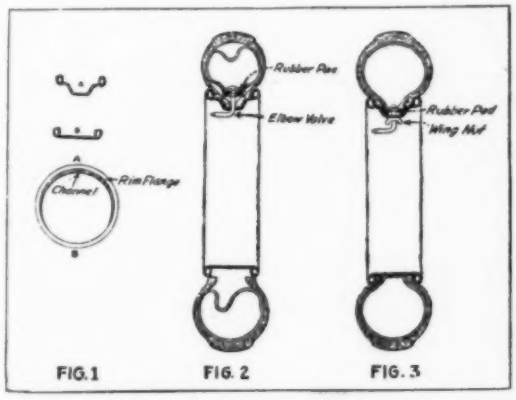
*December 31, 1925.
†The first of each month.
‡‡January 22, 1927.

New Michelin Tire and Rim Unit

A new type of rim, inner tube and tire casing combination has recently been announced in France by the Michelin Tire Co. It is claimed that the new departure is a distinct advance over the clincher and straight side flat rim combinations, also over the straight side tire with full drop rim. While this unique development retains the advantages of these older designs, it embodies additional important advantages which may ultimately cause it to supersede the earlier rim and tire assemblies.

In the new combination the casing does not differ essentially from Michelin regular straight side construction except that it is reinforced with steel wire and has a special tread design. The rim, however, embodies the controlling feature of the design, consisting of a single piece with no movable part. It has two straight flanges to engage the casing beads. At the valve hole a channel or depression is made in the base of the rim. The depth of this channel gradually decreases both ways from the valve hole until it wholly disappears at a point somewhat below the diameter as indicated in the side elevation of the rim shown in Figure 1 where the shaded portion indicates the varying depth of the depression. Profile *A* in Figure 1 also shows the section at *A* in the side elevation of the rim. The flat base profile *B* is a cross section at *B* on the opposite side of the rim. The tapering and partial drop center feature is the chief difference between the new rim design and that of the ordinary drop center rim.

The inner tube used with the new rim differs from an ordinary tube in the elbow valve at the base of which is a fairly thick rubber pad. The latter functions under inflation, to fill the rim depression and force the tire beads against the rim flanges all around the rim. The channel tapering in both directions from the valve hole makes possible mounting and demounting the tire. Thus, by forcing the tire beads into the depression near the valve, the beads at the opposite side of the rim are able to pass over the rim edges. While the valve pad occupies the channel there is no possibility of the beads descending into the depression to permit demounting the tire. This is a safety feature. As soon as the tube is fully inflated the wing nut is tightened, locking the tube pad in place at the valve base. Should the tube become deflated the tire cannot come off the rim.



Michelin Confort Bibendum Tire

The new design tire and rim unit is announced as standard equipment, beginning in 1927, for French cars. While they are superior in design neither the new tire nor the wheel will be more expensive than the old equipment.

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